JOURNAL

OF THE

ASIATIC SOCIETY

OF

BENGAL.

EDITED

BY THE SECRETARY.

VOL. X.

PART I. JANUARY TO JUNE, 1841.

NEW SERIES.

"It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science, in different parts of *Asia* will commit their observations to writing, and send them to the Asiatic Society in Calcutta; it will languish, if such communications shall be long intermitted; and will die away, if they shall entirely cease."—SIR WM. JONES.

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JOURNAL

OF THE

ASIATIC SOCIETY.

Abstract Journal of the Routes of Lieutenants A. Broome *and* A. Cunningham, *to the sources of the Punjab rivers.*

Object of Journey.

The object of the journey which we performed during the rainy season of 1839, was to ascertain the sources of the Punjab rivers; and at the same time to collect every kind of information that we thought might be useful and interesting regarding the countries through which we were to pass.

Proposed plan of Journey.

The plan which we laid down for ourselves was to travel in company northwards from Simla as far as Tandee on the Chundra-bhága river; and there separating the one to make a detour to the east, and return to Simla by the Spiti river; the other to pursue a westerly course over the hills to Kashmeer.

Journal.

The source of the Beeas river having been visited before by three different travellers; Moorcroft, Gerard, and Henderson, all of whom crossed the Sutluj at Bulaspoor, and proceeded through the state of Mundee to Sooltanpoor, the capital of Kooloo; we determined to vary our route from theirs as much as we were able; and with this view we crossed the Sutluj at Rampore on the 19th of June, by a *jhoola*, or swinging rope, from which a loop is suspended in which the passenger sits. On the 20th we crossed the mountain spur separating the Koorpua Nullah from the Sutluj by the Gai Ghatee, or Cow's Pass, 7,093 feet in height, and descended through a rich cultivation to the bank of the Koorpua Nullah, which we crossed by a *sanga*, or spar laid across the stream on the 21st., and ascending the Chenáhee Nullah we passed a water-fall of one hundred feet, and

reached the village of Suroua, situated in a lovely little valley, where we saw wheat as fine as any in England. Above the village, the valley is a level meadow about three quarters of a mile long by half a mile in breadth, surrounded on all sides by thick woods of walnut, chesnut, apricot, peach, and cherry, with acacia, mimosa, cypress, cedar, and every variety of pine : amongst which were white and red roses, jessamine, a white flowering thorn like may, and a beautiful large iris, besides wall-flowers, forget-me-not, strawberries and poleantus, with flowers of all shades of red, brown, and yellow. There were three waterfalls at the head of the valley ; the lowest and least pouring down in one unbroken stream over the rock, which is naturally hollowed into a deep recess, forming a very pretty, cool, and musical bower.

On the 24th of June we reached the top of the Pass at the head of the Suroan Valley, called Chaol Ghaut, 10,170 feet high, where we halted for the night. Snow was lying in a sheltered ravine on the northern slope of the mountain, which is part of the lofty range forming the shed-water between the Sutluj and Beeas rivers. Several of the peaks in this range are 18,000 feet in height, and are covered with perpetual snow. From this we descended over a clayey soil, made dangerously slippery by incessant rain, to the village of Bédath, at the junction of the two torrents which form the Teerthun river, along whose banks we proceeded for three days to Larjee, where it joins the Syneja river, and where about 100 yards lower down the united streams fall into the Beeas river, just at that point where the Beeas after running for a long course southward turns abruptly to the west through a narrow gorge, the channel of the three united streams not being so broad as that of any one of them. We were much surprized to find that this remarkable junction of three large streams was not esteemed holy. We rested in a large cave excavated in the variegated marble rock by Munnee Ram, a former Wuzeer of Kooloo ; who, we were told used frequently to come to this place for many days together to escape from the cares of state ; but more likely he came to bathe at the junction of the three rivers, for a more sterile and inhospitable place could not be conceived.

Beeas river.

We then ascended the course of the Beeas river, which widened after a few miles into a beautiful large valley ; generally about half a mile across, and wooded down to the water's edge, with a broad winding stream variegated

with many islands. We crossed the Gomuttee river, a considerable tributary on the left bank of the Beeas, by a ricketty wooden bridge, and passed over the Beeas itself upon inflated buffalo skins to the fort of Bajowra, where the road from Mundee, by which Moorcroft, Gerard, and Henderson had travelled joins the road from Rampoor. On the evening of the 29th of June we reached Sooltanpoor, the capital of Kooloo, and found lodgings ready for us in the house of the former Wuzeer of Kooloo. On the following day we paid the Rajah a visit of ceremony. He was the same Ajeet Singh whom Moorcroft had seen; but when we saw him he was completely at the mercy of the Sikhs, who lorded it over him, even in his own Durbar.

The capital of Kooloo, Sooltanpoor, or as it is sometimes called Rughoo Náthpoor, from the chief temple being dedicated to Rughoonath, could never have been extensive, and it was then daily becoming less. It is situated at the confluence of the Serbullee, a small stream, with the Beeas river. It has but two streets, but they are paved with boulder stones, as are likewise all the lanes. The houses are built of stone and wood, but we saw none of any particular neatness. Goitre was prevalent, diseases of the eye common, and extreme dirtiness universal. The annual revenue was said to be 1,20,000 Rupees, of which the Sikh Government seized 70,000.

We left Sooltanpoor on the 3rd of July; but instead of crossing the river to the left bank, as Moorcroft did, by the two bridges immediately above the town, we proceeded along the right bank. The valley opened as we advanced, and the scenery became bold and beautiful. The islands were numerous and well wooded; and the banks were alternately gentle slopes covered with grass to the water's edge, and steep alluvial spurs overhanging the river, and covered with apricots, peaches, apples, pears, figs, and grasses all growing wild; further on, were the pine-clad slopes of the mountains on each bank, the nearest green, the more distant blue; and beyond all, appeared the lofty snowy peaks at the head of the river.

On the evening of the 4th of July we halted on a low bank, close to a hot well, called Seeta Koond. The well was surrounded by a square enclosure with a few stone figures of deities placed in the corners. The temperature of the water was 104°. of Faht. the spring has probably some connection with the hot wells at Biseshta-moonh, on the opposite

bank of the river, which were visited by Moorcroft, who however does not mention their temperature. In the morning we continued our journey, and after passing through a forest of noble cedars we reached the village of Booruwa. There the scenery was very picturesque. On the left and to the front were snowy peaks; but to the right there were steep cliffs of gneiss, resembling "castellated parapets," as Moorcroft described them twenty years ago. At two miles beyond this we passed Kothee, the last village in the vale of the Beeas river, and proceeded to a very pretty level spot of ground called Ralha, surrounded by high cliffs, and steep green slopes, and where the Beeas was so narrow that one might have jumped across it. In the morning we made a laborious ascent of two miles by an irregular flight of steps, built about 25 or 30 years ago by a Brahmin, who had charge of the custom house opposite the village of Koshee. The road was then tolerably level for about a mile; after which it continued ascending for two miles, crossing all the ravines on hard snow beds, which even then, 7th of July, had not melted, until we reached the head of the Pass, where from beneath an enormous block of mica slate, the infant Beeas had its birth at a height of 12,941 feet. On the top of this block we built a pile of stones, and in the midst erected a slab on which we inscribed our initials. The crest of the Rotung-joth, or pass, is a little higher than the mica slate block, or just 13,000 feet, from which it slopes gradually to the north for about a mile over a hard bed of snow. The heat and glare reflected from the snow were intolerable, and our faces were completely blistered. From this the view of the snowy peaks of Tartary, the land of undissolving snow, was extensive and beautiful. Three thousand feet beneath us rolled the Chundra river, which even there was a deep stream, 100 feet wide; and on all sides was dazzling snow, from the midst of which towered the gigantic mountains,

——— Whose lofty peaks to distant realms in sight,
Present a Siva's smile, a lotus white.

One of the peaks, about twenty miles higher up the river, appeared like a mighty natural obelisk against the cloudless blue sky. It is called *Indr-sar-deo-ka-thán*, or "the abode of the supreme deity, Indra."

The descent was steep and rugged for about three miles to the bank of the Chundra river, which we crossed by a suspension bridge made of

birchen twig rope, having a span of 106 feet, and a height of forty feet above the stream. We halted at Koksur, the first village in Lahul, and the highest on the bank of the Chundra, at an elevation of 10,053 feet. There was not even a bush to be seen as far as the eye could reach, although the vegetation around the village was rich and luxuriant, the whole ground being covered with strawberries, dwarf irises, hyacinths, and pinks; there was also one primrose in blossom on the 8th of July.

From Koksur we proceeded along the right bank of the Chundra for five miles to the village of Tehling, where we saw on both sides of the river a few poor withered looking yews; snow was lying in all the gorges and ravines; and even in the bed of the main stream there were large masses forty and fifty feet thick on each side, which had only recently been cut through by the current and undermined. In two days we reached the village of Gooroo Guntall, twenty miles below Koksur, at the junction of the Chundra and Bhaga rivers, whose united streams form the Chundra-Bhaga, or Chenab river, the Sandabal of Ptolemy the geographer. There we halted as the birchen bridge over the Bhaga river had been swept away; and on the following morning we ascended the left bank of the Bhaga for about four miles, and passing through the large villages of Gwajun and Kardung, we reached a wooden bridge, forty feet span and forty feet in height, by which we crossed the stream, and then descended it for four miles to Tandee, the chief village of Lahul, which is exactly opposite to Gooroo Guntall, the village from which we had started in the morning. The only trees about Tandee are yews and pollard willows. On the banks of the Bhága however there were pines; and we found plenty of wild gooseberries of which we made very good puddings: some of these gooseberries that we bottled with snow water remained perfectly good after a journey to Simla, where they were cooked and eaten. We saw some yellow roses too on the banks of the Bhaga, and some columbine near Tandee. The crops consist of buck-wheat, common wheat, and barley; of which buck-wheat is by far the most common. The crops frequently fail either through the backwardness of the warm season, or through the early setting in of the long winter; indeed for three years before our arrival at Tandee there had been no good crops of wheat or barley. The natives however attributed this failure to the displeasure of Provi-

dence on account of the conquest of the country by the Sikhs, and the expulsion of the Raja of Ludákh.

At Tandee we heard of the death of Runjeet Singh; and it was currently reported that we had been sent to take possession of the country: this indeed we might easily have done, for our party mustered about one hundred people; and the natives of Lahul are so cowardly that Moorcroft relates they on one occasion, when invaded by a small party, buried their swords and fled to the more inaccessible parts of the mountains. Here we parted company on the morning of the 15th of July; the one to ascend the Bhaga river and to return to Simla by the Spiti river; and the other to follow the Chundrabhaga and to proceed through Burmawur on the Boodhil river to Chumba, and from thence to Kashmeer.

On Lightning Conductors to Powder Magazines. By W. B. O'Shaughnessy, *M. D. Assistant Surgeon, Bengal Medical Service.*

The paper now published by Prof. O'Shaughnessy is in continuation of his paper on Lightning Conductors, which appeared in No. 99 of this Journal. The positions contained in that former essay having been arraigned in a contemporary publication,* the Professor put forth a rejoinder to the exceptions taken against his views and statements by the writers above alluded to, and then placed his rejoinder in my hands for publication in this Journal, as a necessary sequel to his original essay. The circumstances under which the paper now published was written, give it of necessity a certain controversial tone, which I have felt myself bound to account for, while laying before my readers a paper, without which the essay on Lightning Conductors, already in their hands, would be incomplete.

———

To the Editor of the Calcutta Journal of Natural History, &c.

Illness and absence from Calcutta have prevented my sending an earlier notice of the article which has appeared in your last number relative to the attachment of lightning rods to Powder Magazines.

The only point in the article in question, which I feel myself called upon to notice in your pages, is the attempt of your correspondent to shew that I had falsely described the spear-head of the Britannia on

* Dr. M'Clelland's Quarterly "Journal of Natural History."

Government House, as having been partially fused by lightning, on the occasion of the building being struck on the 29th of March 1838. Your anonymous correspondent accuses me of such shameful falsehood, on grounds which I shall take up in the order he gives them.

1st. That he examined the identical piece of iron, which he states now forms the point of the spear on the Britannia, and that he could observe no evidence of fusion.

As the marks of fusion I saw and described, were not larger than the size of a grain of duck shot or a small pea, and as the iron (supposing the piece to be identical, which I shall presently shew strong reason for doubting) must have been exposed to the weather for two years and ten months, an impartial writer should rather have concluded that the marks had been effaced by the exposure, than that I had stated what was untrue.

Accordingly your correspondent asserts, *secondly*, that he obtained testimony of the individual by whom the repairs were executed; who gave negative evidence to any alteration having been made in the point.

In justice to myself, I am bound to protest against such evidence being for one moment attended to—"Anonymous" No. 1, charges me with falsehood, and adduces the testimony of "Anonymous" No. 2, to corroborate his case—and this in a simple matter of fact. *Opinions* or arguments are as strong in every respect, though expressed anonymously as when authenticated by the writer's name. But on questions of *facts*, personal testimony must ever preponderate. Why does not your correspondent come forward in his own name? His papers are highly creditable to his abilities, and his testimony would then be of value as to any fact he asserts.

But receiving the case on internal evidence alone, it might be that no alteration was made in the point during the repairs; it might be that the spear-head is the same as that struck, and nevertheless it is but the natural consequence of the corrosion of an iron point by the influence of climate, that the appearances I *saw* may have been entirely obliterated.

Thirdly. He accuses me of error in speaking of the spear-*head*, when I should have called it the spear-point. This is not worth rejoinder. Nothing but the mere spirit of hyper-criticism could condescend to such trifling.

Fourthly. He asserts that the lower portion of the wooden spear shews no evidence of the lightning having passed through it. Neither should it, as it never was touched.

The lightning first fell on the point, the concussion shivered the spear, and the arm of the statue; from the point it struck the copper of the dome, and thence by three divisions it entered the house, as described in the accompanying report.

Fifthly. The writer states, "there is no evidence of a direct or lateral discharge on the spikes with which the head of the figure is covered." These may or may not have been affected, there was no examination made of the spikes at the time, as I had no fancy to climbing the scaffolding for the purpose, and as far as their having been struck or not affects the question of the point, those who know the freaks and antics which lightning displays in its course, will readily admit that one metallic point may be struck close to another, without this being interfered with in the least degree.

Lastly. He dwells emphatically on the circumstance that neither Captain Fitzgerald nor his Assistant Mr. Barnes, the overseer, have in any way publicly confirmed my statement, although they are both in Calcutta, and could have been appealed to.

On this I have to observe, that the writer is (perhaps better than any other person) aware of circumstances which rendered it difficult for me to appeal to Capt. Fitzgerald or Mr. Barnes on this subject—nor did I then, nor do I now, feel the necessity of such an appeal. I described what I saw. My character for veracity must stand or fall by the correctness of my statement; had the gentleman alluded to, or his assistant publicly contradicted me, it would still be a question with every impartial man, which statement was to be believed implicitly; and most observers would probably conclude, that it was more likely that the marks of fusion I described had escaped the attention of these individuals, than that I had wilfully and falsely described that which had no existence.

I contend, too, that it can never be admitted that a writer's statements are invalidated in the least degree by the silence of any persons he refers to. The writer cannot force these persons forward in his defence, and many reasons may exist, too deep for the world to penetrate, and too powerful to allow the parties to act with perfect candour,

towards one with whom they may have been placed in disagreeable relations. I speak of course generally, and solely with reference to the hardship of being expected to force forward the testimony referred to.

Throughout his remarks, the writer attaches much more importance to the question of the spear-point being struck or fused, than it in reality deserves; but as he admits, (p. 492, last paragraph) that had it been so struck, the fact would have been "fatal to his pre-conceived opinion as to the course of the lightning on that occasion," I am warranted in adducing some further evidence in support of my statement.

On the morning after the accident, I was invited by Captain Fitzgerald to visit Government House, and offer him suggestions as to the repairs required, and the re-arrangement of the conductors. I went there in the evening and met Mr. Barnes, who shewed me the broken articles, and the course of the explosion. Captain Fitzgerald I now recollect was not present on that occasion. I wrote to Captain Fitzgerald next day, and among other suggestions I especially dwelt on the necessity of replacing the wooden spear by one of metal, connecting this with the copper of the dome, and this lastly by metallic straps, with four additional conductors to be erected adjacent to the dome. Captain Fitzgerald's report, hereunto annexed, shews that my suggestions were carried into effect. On this I have here one remark to make. If this report be correct, if my suggestions have been followed, if the metal spear has been erected, what becomes of your correspondent's assertions that the identical point has been replaced, and that he has re-examined the lower part of the original spear. If, on the other hand, the wooden spear has been replaced as it originally stood, then every impartial electrician will admit,* that the Government House of Calcutta will in all probability be again, and at no distant period, the scene of a similar casuality to that of the 29th of March, 1838. In this case it is in truth provided with a snare for every thunder-cloud that passes.

With reference to my plans, before the writer censures these he should in fairness clearly and fully state what they are. This he does not do, and for such a statement I refer to the Journal of the Asiatic Society for 1839, in which my papers are published. If the Editor

* As Captain Fitzgerald does indirectly in his report.—W. B. O'S.

of the "Calcutta Journal of Natural History," desires to be impartial, I claim from him the circulation of these papers to his subscribers, with additional notes with which I will supply him with pleasure, as *extra limites* to his Journal. All expenses of printing, postage, &c. I will cheerfully defray. His subscribers will then see that I have never opposed the attachment of conductors to Powder Magazines—that I freely admitted their value, but contended that under such peculiar circumstances, they should be erected in a greater number than Mr. Daniell recommended, and at a certain distance from the Magazine.

In conclusion, I have to acknowledge the kind exhortation of your correspondent that I should conduct this discussion with moderation, and that I should refrain from indulging in a spirit of injustice to Mr. M'Clelland and himself. All this is very amiable in gentlemen who are endeavouring to fix upon me an imputation of falsehood, and who would hide from the world, that in consequence of the Griffith and Wallich controversy, and of another public occurrence of some celebrity, I have not for some time had the happiness of being numbered among the friends of my commentators on this occasion. The remembrances of past collisions has never yet mingled honey with a critic's ink, the strongest impulse of nature would, on the contrary, urge him to dip his pen by preference in gall or acid. How far this feeling has operated on the present occasion, those who know the relative positions of the parties can readily conclude; to others I shall commit my arguments and facts, (if Dr. M'Clelland will allow me to do so) in the confidence that they will be dispassionately considered, and in the feeling that if I fail, there is no disgrace in being worsted in a controversy with an antagonist of Mr. Daniell's deserved reputation.

I am Sir, with much respect,

Your obedient servant,

W. B. O'Shaughnessy, M. D.

Assistant Surgeon.

Calcutta,

1*st March*, 1841.

Report by Captain FITZGERALD *on the accident by Lightning to Government House, Calcutta.*

To CAPTAIN SANDERS,

No. 563. *Secretary, Military Board.*

SIR,

I have the honor to report for the information of the Military Board, that the Government House was struck by lightning during the storm which occurred early this morning. The lightning seems to have been attracted to the building by the iron at the point of the spear attached to the figure of Britannia on the top of the dome; after demolishing the spear, it pursued its course down the external copper of the dome, without apparently doing any injury, and forced its way into the ball room in three separate places. It has left its traces on the ceiling and wall of the southern division of the room, where it has injured one of the pier-glasses, and then passed out at the adjoining window. Again, on the eastern side of the central division it has pursued a similar course, injuring a pier-glass, and again passing out of the adjoining windows. On the western side of the central division it has done the most injury, for after passing through the ceiling it has broken one of the pier-glasses at its corner, then running down into the marble hall, has escaped out of one of the windows, breaking in its exit, as the others also did, several panes of glass.

2nd. I requested Dr. O'Shaughnessy to inspect the effects of the lightning, and he has expressed his surprize that so little comparative injury has been caused by it. The sharp point of iron at the end of the spear, and the studding of the shoulders of the statue with iron nails (intended to prevent birds from sitting on it) has served in the first instance to attract the lightning, and that it has never been struck before, he attributes to the protecting power of the four conductors, which, however, he considers to be twice as far from each other as they ought to be.

3rd. In repairing the statue, he recommends that the spear should be made of metal, and that it should be connected with one or more of the corner conductors by means of a continuous metallic rod. It would perhaps also be advisable, under the circumstances above men-

tioned, to affix four more conductors to the house, to render it more secure from a similar visitation.

4th. With the Board's permission, I will, in rectifying the damage, carry the improvements above suggested into effect.

I have, &c.

(Signed) W. R. FITZGERALD,
Civil Architect.

FORT WILLIAM,
30th March, 1838.

Memorandum on the Trade between the Towns of Shikarpore and Candahar.—By Lieut. J. POSTANS, *Assistant Political Agent, Shikarpore, Sindh.*

As it is of importance in connection with the prospects of trade with the countries bordering on, or accessible by means of the river Indus, to ascertain what return commodities may be looked from these quarters, their value and quality as suitable to the European market, I have availed myself of the arrival of the annual Kuffillahs at Shikarpore from Candahar, to obtain the following information on the various articles composing the investments from the latter place, shewing the return trade for English piece goods, metals, groceries, &c. transmitted from the former.

I have ascertained, from good authority, that the market at Candahar for European fabrics of the usual manufactures suitable to the habits and tastes of the people of these countries, is at present unusually brisk, and the demand far greater than the supply; moreover, that there is every reason to believe from the increase of security to the merchant, decrease of transit dues, impulse lately given to Candahar as a mart for the N. W., and the influx of population, that this demand will not be likely materially to decline. To the fabrics in demand, profits derived, and other particulars, I will refer hereafter.

The insecure state of the Bolan Pass, has this year retarded the arrival of the Caravans, and decreased their number. I shall quote the following list of articles received by one:—

No. 1.—*Turquoise Earth*—mds. 14—price from four rupees to twelve rupees per lb. This article is an important one in the trade to

Shikarpore from Candahar, but it is doubtful if it would be adapted to the European market. The mines are situated at Nishapúr near Meshid, and the Persian Government has of late years placed agents to prevent any large or valuable stones from being exported to Herat, whence they find their way to Shikarpore viâ Candahar; there is therefore a great scarcity of the large Turquoises, which are so much prized, the smaller are sufficiently plentiful to be worn by all classes.

The stone is polished from its rough state by means of a vertical wheel of baked clay, set in motion by the hand and moistened, the value of the stone being entirely determined by the depth of its colour, and absence of white flaws.

2.—*Raw Silk* (kokanee)—½ md. price rupees 9-9-0 per lb.
See memorandum already furnished on this article.

3.—*Churus* from Bokhara—5 mds.—price 3 annas per lb.
An intoxicating drug prepared from hemp seed (Bang), and used in these countries for the same purposes as opium elsewhere.

4.—*Gum* from Candahar—46 mds.—3 lbs. per rupee.
This gum appears of the same description as that which is known as "Gum Arabic," and is in most extensive use for dyeing, &c.

5.—*Silk*—Manufactured fabrics from Herat of various kinds—pieces 1854: prices not fixed.
None of these would be adapted for the European Market, being entirely manufactured to suit Asiatic tastes, and principally used in the wealthier Sindee harems.

6.—*Dried Fruits* of various kinds, kismis—prunes, dried black grapes, walnuts, dried apricots, almonds, and dates, in great quantities:—prices not quoted, as not probably adapted for trade.

7.—*Tinsel Thread for embroidery.*—2 mds.—price 1 anna per tolah.

8.—*Khund Seah*, preparation from the sugar cane of Jellalabad—1½ mds.—price 1½ lbs. per rupee.

9.—*Broken Copper and brass vessels*—4½ mds.—copper 1 rupee 8 annas per lb.—brass 1 rupee 7 annas per lb. These are returned to Shikarpore to be re-manufactured, for which they do not apparently possess the means at Candahar.

10.—*Rodung.* Madder dye—40 mds.—price 8 rupees per md. This is an important article in this trade, and brought down in con-

siderable quantities. There are two descriptions called "*Rodung kukree*," and "*Rodung phurreeah*." The latter is cultivated at Candahar, is of a larger size, and valued at 16 rupees per md., or double that of the other.

11.—Saffron *Bakooee*—$\frac{1}{2}$ md.—per lb. 15 rupees. "*Bakooee*" so called from its being produced at Bakwa, to the west of Candahar.

12.—*Safflower* from Herat (quantity not known) price 37 rupees per lb. about 10 boxes annually, of from 6 to 10 lbs. per box.

13.—*Gum Salop* from Herat (quantity not known)—5 Rs. per lb. Small quantities only of this article are brought down, but it is in great request at Shikarpore.

14.—*Sir Khisht*, a species of manna, price 5 Rs. per lb; from Herat, used medicinally, and about 10 mds. imported annually.

15.—*Musagh*, dye from the walnut tree; Cabool—8 mds—$1\frac{1}{4}$ lb. per rupee.

16.—Antimony from Beila in Lus—mds. $15\frac{1}{2}$—price $1\frac{3}{4}$ lb. per rupee. An article in great demand, from the constant use made of it by the natives of these countries. If adapted to the European Market, it should find its way to Bombay viâ Soumeany and Karrachee.

17.—Old paper $6\frac{1}{2}$ mds.—price 2 lbs. per rupee. Sent to Shikarpore to be re-manufactured.

18.—*Punvieer* (not known)—20 mds.—9 lbs. per rupee. Used medicinally, and produced from some wild shrub in the hills.

19.—*Podeneh*—dried mint—6 mds.—5 rupees per maund.

20.—*Hingozeh*—Assafœtida—60 mds.—$1\frac{1}{4}$ rupee per lb. This is an important article of this trade, being produced abundantly in Khorassan and the hilly country of Beloochistan.

21.—Carraway seeds from Khorassan (quantity not known)—2 lbs. per rupee—about 70 or 80 mds. imported annually.

22.—*Airmah*, a very fine description of cotton from Herat, about 80 mds. imported annually—price $1\frac{3}{4}$ rupee per lb.; used in embroidery, and highly prized.

23.—*Cochineal* from Khorassan (quantity not known)—price 9 rupees per lb. The amount of annual import may be about 8 or 10 mds., and its price is occasionally from 18 to 20

rupees per lb.; it is used in dyeing silks, and also brought to Shikarpore from Bombay.

24.—*Bhojgund* (name not known) from Khorassan—price 14 to 15 rupees per md.; annually about 70 maunds; in great request, and used as a dye to silks.

25.—*Gooljileel* (name not known) from Khorassan—price 15 rupees per md.; annually about 80 mds.; used as a green dye to silks.

The following, though appertaining to Cutchee, are inserted here, as they are products of that *country*, and imported into the Shikarpore market:

26.—*Alum* from the hilly country of Cutchee, annually about 200 mds.—price 8 rupees per md.

27.—*Khunzul*, Colocynth, bitter apple, grows as a perfect weed all over the plains of Cutchee, and to be purchased at Shikarpore 7 or 8 per one pice.

28.—*Saltpetre* can be manufactured in Cutchee and other parts of the country in any quantity required; value at Shikarpore 6 rupees per md.

29.—*Sulphur* produced in the Murree and Boogtie hills, where are mines which deserve attention; about 10 or 12 mds., are brought annually to Shikarpore, where it is valued at 4 rupees per md.

30.—*Khar*, a kind of potash, produced by the incineration of the Lye, or tamarisk, and other salt shrubs; it is in great use in scouring, dyeing, &c. and worth 1 rupee per $1\frac{1}{2}$ md. at Shikarpore, 10 or 12,000 mds. are brought in yearly.

The prices of the above articles include all duties, and few of them are exported beyond Khyrpore, or the Sindh territories. About four Caravans arrive annually, and the profit on this branch of the trade is about 10 per cent.

The trade from Shikarpore to Candahar in British manufactures consists principally of the articles hereafter enumerated, and the present profits, all expences paid, are at least 50 per cent. between the two places, notwithstanding the double rate of Camel hire, (52 rupees) consequent upon the demands of our troops. As the present state of the Candahar market, however, may not be considered a fair criterion, or average of the profits of the trade, I may mention, that these

are never less than from 15 to 20 per cent., the rate of Camel hire being 20 rupees a Camel, carrying from 6 to 7 mds.

I learn that complaints have been lately made of the great inferiority of the articles, particularly the want of stability in the colours of the chintzes (printed cottons of all kinds come under this denomination) always in great demand.

In the following list of the fabrics above alluded to, I have also given the names by which they are known in these countries, with samples of such as are not recognized :—

1.—" *Ulwan Makhootie,*" red dyed Cotton Cloth.
2.—Cotton White.
3.———— " *Kessie,*" partly coloured.
4.—" *Chuhulwel,*" long cloth (of apparently very inferior descriptions).
5.—" *Chintz pukhtet,*" (glazed Chintz.)
6.—" ——— *Budul,*" (printed cottons.)
7.—" *Madrapat,*" bleached.
8.———————— unbleached.
9.—" *Abrah,*" (zebra) red and white.
10.————, yellow.
11.————, Chenay.
12.—" *Jamadanee.*"
13.—" *Mulmul.*"
14.—" *Juggernat Muslin.*"
15.—" *Mukhmul,*" (black velvet.)
16.—" *Patun,*" bleached, species of sheeting cloth.
17.————, unbleached.
18.—" *Mahoot*" coloured (coarse broad cloth.)
19.—" *Khinkaubs.*"

Memorandum on the city of Shikarpoor, in Upper Sindh. By Lieut. J. POSTANS, *Assistant Political Agent, Upper Sindh.*

Shikarpore—its position.

Shikarpore may be considered the most important town in the country of Sindh in point of trade, population, and influence. It is situated in Upper Sindh, or above Sindh proper, at a distance of twenty-four miles NW. from the Indus at Sukhur, about forty miles from the edge of the desert at Rojhan, which separates Upper Sindh from Cutchee.

Origin.

Shikarpore dates its origin to the year of the Hijira 1026, (A.D. 1617) is an ill built dirty town, its walls in a state of dilapidation and decay, the consequence of the total neglect and apathy of the chiefs of the country to the improvement of their possessions, further shewn in the neglect of the Sindh. A canal flows within a mile of the city towards Larkhana, providing means of irrigation to a large tract of country, and a temporary, but important water communication from the Indus, during a few months of the year.

Description of the city.

The houses in Shikarpore are built of unburnt brick, upper roomed, and some of those belonging to the wealthiest Sonears are of respectable size, and convenient. The streets are narrow, confined, and dirty in the extreme; the great Bazar, which is the centre of all trade and banking transactions, for which Shikarpore is celebrated, extends for a distance of 800 yards, running immediately through the centre of the city. It is, in common with the Bazars of all towns in Sindh, protected from the oppressive heat by mats stretched from the houses on either side; this although it imparts an appearance of coolness, occasions by the stagnation of air an insufferable, close, and evidently unwholesome atmosphere, evinced in the sickly appearance of those who pass nearly the whole of their time in the shops and counting houses. This Bazar is generally thronged with people, and though there is little display of merchandize, the place has the air of bustle and importance which it merits. The walls of Shikarpore—also of unburnt brick—have been allowed to remain so totally without repairs that they no longer deserve the name of a protection to the city; they enclose a space of 3831 yards in circumference.

There are eight gates. The suburbs of Shikarpore are very extensive, and a great portion of the population calculated as belonging to the city reside outside, particularly the Mahomedans and labouring classes. With the exception of one tolerable Musjied on the southern side, Shikarpore possesses no building of importance.

Suburbs.

By a census taken with considerable case during the preceding month, the following is a return of the inhabitants of this city, including the suburbs:—

HINDOOS.

Males, 9,494 } 18,913 souls. Houses 3,686.
Females, 9,419 }

MAHOMEDANS.

Males, 4,556, } 8,647 souls. Houses 1,806
Females, 4,091 }

In detail thus:—Hindoos divided according to professions—

Hindoos.

Grain sellers,	...	...	...	...	64
Confectioners,	...	...	...	...	56
Cotton sellers,	...	...	...	...	12
Soucars,	...	..	...	...	35
Shroffs,	...	...	...	...	66
Cloth merchants,	...	...	...	...	65
Goldsmiths,	...	...	...	...	94
Dealers in Drugs,	...	...	...	...	32
——— Metal,	...	...	...	...	17
——— Silk,	..	...	...	...	37
——— Enamel,	...	...	...	...	19
——— Perfumes,	...	...	.	...	11
Vegetable and Milk sellers,	...	...	...		46
Dealers in dry fruit,	...	...	...	...	67
Do. salt and sundries,	...	...	...		249
Ivory turners,	...	...	..	...	3

Total Hindoo Shops, 923*

* The remainder of the Hindoos are composed of Brahmins, and those who are not shopkeepers.

The Mahomedans divided according to trades, &c.—

Mahomedans.		
	Weavers of coarse cloths, ...	1554
	Dyers and washermen, ...	1248
	Oil pressers, ...	50
	Weavers of mats, ...	30
	Tailors, ...	300
	Barbers, ...	244
	Shoemakers and workers in leather, ...	305
	Ironmongers, ...	290
	Embroiderers, ...	95
	Lapidaries, ...	164
	Potters, ...	103
	Cotton cleaners, ...	121
	Butchers, ...	89
	Carpenters, ...	246
	Preparers of woollen mamids, ...	33
	Labourers, ...	467
	Musicians and singers, ...	267
	Cossids, ...	83
	Syuds and Moolahs, ...	433
	Cultivators, ...	2389
	Gardeners, ...	47
	Total, ...	8,647

Affghans to Pattans.

Independent of the above, there are altogether 1001 Affghans and Pattans in the city of Shikarpore, employed as cultivators, or for Police duties by the Government; they are of the following tribes.—Populzyge—2. Pishengee (Syuds); 3. Bamkzye; 4. Moorzye; 5. Easakzye; 6. Mogal; 7. Lukoozye; 8. Dooranee; 9. Baber; 10. Oosteranee; 11. Monim; 12. Kakut; 13. Ghilzee; 14. Bureeh; 15. Burdarame; 16. ———; 17. Babee; 18. Dureanee; 19. Owan: 20. Prumee.

Population of Mahomedans and Hindoos.

It will be seen from the above that the population of Shikarpore may be calculated at 29,700, say 30,000 souls, of whom 9,647, say 10,000, or one-third, are Mahomedans. In the above are also included many Hindoos, who are employed in distant countries as agents from the Soucars.

Hindoo's trade.

The Hindoos carry on all the trade, while the cultivation and artizanship of almost every denomination is in the hands of the Mahomedans.

Condition and manners of Hindoos.

The dress of the Hindoos of Shikarpore varies little from that of the same class in other parts of India, except in those who are servants of the native Governments, as deputies or collectors of revenue, and these invariably adopt the beard of Mahomed and costume of Sindh. On their habits of life and religious observances, the Hindoos of this city, as indeed throughout the whole of the Mahomedan countries westward of the Indus, indulge in a degree of laxity, totally at variance with the strict rules by which they generally profess to be regulated; they possess however an unusual degree of influence at Shikarpore, and are too valuable to the financial resourses of the country not to be permitted to maintain it.

Condition of Mahomedans.

With the exception of the Moolahs and Syudhs, few of the Mahomedans of this city are either wealthy or influential. The Affghan Zamindars who under that rule held important possessions in the vicinity, and were men of note and consideration, have been gradually stripped of their rights by the Talpur chiefs, although in many cases the same were guaranteed to them under promise held to be sacred; in consequence of this their number has considerably decreased, and those who remain are poor, and from the connections they have formed in the country have become naturalized, and are no longer entitled to be called foreigners.

Adjacent country and cultivation.

The country in the immediate vicinity of Shikarpore is low, and admits freely of irrigation from the inundations of the river Indus by means of smaller Nullahs, or water courses leading from the Sindh Canal. Cultivation is extensively carried on, and the gardens of Shikarpore are rich in all the fruits peculiar to the country, though mangoes, neim, acacia, pipul, and mulberry trees attain great size. The soil is a rich alluvial, and its capabilities for production are no where better displayed than in the Mogullee district (that in which Shikarpore is situated), owing to the advantages in this respect (possessed by nearly the whole of upper Sindh) being turned to due account, still comparatively speaking only a limited portion of the land is brought under cultivation. Rice and

Juwarree form the great "Kurreef" or autumnal, and wheat the "Rubbee" or spring crop; the former are entirely dependent on the inundations, which commence to be available for purposes of cultivation about the middle of April, and continue until the middle of September. The "Rubbee" crops are raised by means of wells and bunds formed from the inundation.

Crops.

The soil is so rich that no manure of any kind is used; the inundations bringing with them a certain slimy matter, which appears highly conducive to fertility, the ground is allowed to remain fallow from the reaping of one crop in October, to the sowing of another in April or May, and the same with the Rubbee lands; this rule appears to obtain all over the country.

Soil.

Water is found at an average of about twenty feet from the surface, and to a depth of sixty feet the finest description of sand is alone observable; with the alluvial soil is a superstrata; a stone or rocky foundation of any description is not to be seen.

All the approaches to Shikarpore are bad, from the country being so constantly intersected with water courses, and no measures being taken to provide bridges, or repair the roads, which are cut up by carts, and the constant traffic of camels, bullocks, &c. A comparatively trifling outlay would obviate this, as also improve the Sindh canal, which, from having been allowed to choak up at its mouth, and get generally into disrepair, is only navigable from the end of April to the beginning of October, whereas it is capable of affording an important means of water communication from the Indus to Shikarpore, for at least nine months of the year.

Roads.

Sindh canal.

Shikarpore being in the immediate route for the transmission of merchandize to Khorassan and countries to the NW. by the Pass of the Bolan, has with Dera Ghaze Khan obtained the title of one of the gates of Khorassan. Its influence is more immediately felt however in the banking transactions which by means of agents it carries on in every intermediate place beyond the Bolan Pass, from Quettah and Kelat to Bokhara and Herat; as also in all places of mercantile importance in India. Vexatious transit and other duties on goods pursuing the Shikarpore route to Khorassan have tended to turn much of its former trade, especially in European goods

Trade and influence of money transactions.

Duties and imports on trade.

received from its port of Karachee, into the channel of communication to the NW. by the way of Soomeanee, Beila, and Kelat, the more direct, and at present by far the less expensive route. A revisal of imposts,* together with a settlement of Cutchee, and the suppression of the marauding system in that province and in the Bolan Pass, would revive the trade of Shikarpore, and induce its merchants, who do not want for energy, to purchase largely of such investments as might be cheaply transmitted by means of the river Indus; with the absence of tolls on merchandize in transit, whether by water or land, they would be sure of making a favourable market, coupled also with the protection afforded them through the deserts of Cutchee, which they could only formerly procure at an exorbitant amount of black mail to every leader of a predatory band.

Imports.

Shikarpore received from Karachee Bunder, Marwar, Mooltan, Bhawulpore, Khyrpore, and Loodhiana, European piece goods, raw silk, ivory, cochineal, spices of all kinds, coarse cotton cloths, raw silk (China), kinkaubs, silks manufactured, sugar-candy, cocoanut, metals, kiramee (or groceries), drugs of sorts, indigo, opium, saffron, and dyes of sorts. From Cutchee, Khorassan, and the NW. raw silk (Toorkestan,) fruits of sorts, madder, turquoises, antimony, medicinal herbs, sulphur, alum, saffron, assafœtida, medicinal herbs and gums, cochineal, and horses.

Exports.

The exports from Shikarpore are confined to the transmission of goods to Khorassan through the Bolan, and a tolerable trade with Cutchee, Bagh, Gundava, Katria, and Dadur.

They consist of indigo (the most important,) henna, metals of all kinds, country, coarse, and fine cloths, European piece goods (chintzes &c.) Mooltanee coarse cloths, silks manufactured, groceries, and spices, raw cotton, coarse sugar, opium, hemp seed, shields, embroidered horse cloths, and dry grains. The various productions of these countries and their prices in the Shikarpore market† have attracted the attention of that energetic body, the Chamber of Commerce of Bombay, and in the article of indigo alone there can be little doubt but that the

* See a list of export, import, and transit duties, based on articles of trade at Shikarpore (by the author) published in the Bombay Government Gazettee of the 28th July.

† A monthly price current of articles in the Shikarpore market is now published by authority.

produce of the Khyrpore, Bhawulpore, and the Punjab countries will form a staple return commodity for merchandize to be transmitted from the other Presidency; silk (raw), drugs, and dyes may also be enumerated as well worthy of attention. The influence of the British Government, and the protection it has already afforded to trade in these countries have had their effect at Shikarpore, evinced in the increasing revenue* and settlement there of influential traders from Loodhiana, Amritsir, Bhawulpore, and other places.

The revenue of Shikarpore derivable from trade amounted last year

Revenue from trade and lands.

to Rs.	54,736	0	0
Other tax and revenue for lands belonging to the town, ...	16,645	0	0
Making a total of	71,381	0	0

divided between the Khyrpore and Hyderabad chiefs, in the proportion of $\frac{3}{7}$ths to the former, and $\frac{4}{7}$ths to the latter. The lands and villages forming the Shikarpore Pergunnah, amount to about six talookehs, and about sixty villages, of which four talookehs and twenty-three villages only belong to the Hyderabad government; the revenue of the whole, deducting jahgirs, may be about two lacs annually.

Government of the town.

The government of the town is vested in two agents, or governors, furnished by the Hyderabad and Khyrpore Ameers, who have also the duty of the Police of the district, and collection of the revenue.

Climate.

The climate of Shikarpore is sultry, and the heat excessive from the middle of March until the end of August. There are no periodical rains, though storms are generally looked for at the end of June, or middle of July. If rain falls at that time, it continues for a space of two or three days, but severe falls occur at the vernal equinoxes. The air is remarkably dry and clear. The low situation of the town, coupled with its being surrounded by stagnant pools close to the walls, and a large space of the adjacent country for a considerable period

* The soucars report that the trade has increased nearly one-third during the current year.

being completely under water, would warrant a supposition that this place was exceedingly unhealthy; yet it is not so except for a short period from the middle to the end of September, during which the inundations are drying up, and ague in a mild form is prevalent. Exposure to the sun of Sindh, whether Upper or Lower, during the hot months is invariably attended with dangerous effects, and for a certain period of the year the natives themselves avoid it as much as possible. The hot winds of Shikarpore lose much of their intensity, prevailing generally from the southward, and passing over a considerable expanse of water; they continue however during the months of April, May, and June, to blow till midnight. In the deserts N. and W. of Shikarpore, the deadly simoom is often encountered.

The winds vary generally between W. and S. the former the prevailing. The Easterly winds obtain for a short period during the autumnal, and the Westerly during the vernal equinox. The former often precedes rain. Shikarpore is exempted from a great source of annoyance experienced at Sukkur, Hyderabad, and all other places on the banks of the river, from the Delta upwards, viz. sand storms. The cold months may be said to commence in September, and last until the middle of March. Frost and ice are not unusual, and vegetation assumes all the appearance of winter in a northern climate. After a fair experience of a year's residence at Shikarpore, (the season of 1839 being considered an unhealthy one,) I conceive that with the precautions considered necessary elsewhere, of good houses and due attention to draining, troops might be cantoned at this place without any greater disadvantages than are to be met with in most of our stations in the interior of India. When it is considered that the officers and men of a force stationed here during the most trying months of last year were for nearly the whole period under canvas, or in mud huts, that afforded even less shelter than a tent, and that the inundations were allowed to reach in all directions within 200 yards of the camp, it is only surprising that the disease and mortality where so inconsiderable. I believe that out of a force of nearly 2000 men, the latter amounted to under twelve cases. The mornings at Shikarpore are invariably cold.

Routes. Routes from Shikarpore to various places with which it carries on trade, with the estimated distances.

From Shikarpore to the North and East

To Mooltan, by way of Dehi Ahmil, on the river across the river to

Azrezpore.
„ Mierpore.
„ Subzulkote.
„ Khanepore.
„ Ooch.
„ Gullen Garrat, opening of the Ghaut or Sutledge.
„ Sooyabad.
„ Mooltan.

Estimated distances 215 koss; 23 stages for laden camels; occupies from 23 to 26 days.

From Mooltan to Lahore, by way of Chichawntnee, across the Bendee Sheikh Morsa.

„ Seyud Walloo.
„ Jambia.
„ Munjee Baba Narmac Shah.
„ Surakpore.
„ Lahore.

Estimated distance from Mooltan to Lahore 140 koss; 15 stages, and occupies with laden camels about 18 days.

To Amristse from Lahore 25 koss; or 2 stages.

From Amristse to Loodihana 40 koss; or 4 stages.

From Shikarpore to Dera-Ghazee-Khan the route is by way of Rogan Mittenkote and Dajil, estimated distance 170 koss; 20 stages, occupies 20 to 23 days.

Shikarpore to Jaysulmere by way of Sukkur and Roree.

Oodenkote (Oodun ka kila.)
Dandioluk.
Gottaroo.
Chomdred.
Jaysulmere.

* If these distances are compared with those laid down in the late maps of these countries, it would appear that the koss was calculated at about one and half mile; but the idea of distances by the natives is generally very vague, and they calculate more on the time occupied in a journey.

Estimated distance 100 koss; 15 stages, and occupies from 15 to 18 days. From Jaysulmere to Palee by way of Porwin and Jodhpore 120 koss; 16 stages, and occupies 16 to 19 days.

Shikarpore to the NW. to Dadur.

Janeedera.
Royhan (edge of the desert.)
Brushoree (across the desert.)
Kassimka Joke.
Bagh.
Meyassir.
Dadur.

90 koss; 14 stages, occupying from 7 to 10 days.

Above the Bolan.

The routes above the Bolan Pass to Kelat, Kandahar, Cabool, &c. are now too well known to require repetition.

Shikarpore to Karachee.

From Shikarpore to the south to Karachee by way of Sehewan, Karachee, Lorkhana, distance 150 koss; 29 stages, occupying from 29 to 33 days; this road is impracticable from April or May to September as far as Sehewan, and the river is the means of conveying merchandize.

Classical terminology of Natural History. By B. H. Hodgson, Esq., *Resident at the Court of Nepal.*

(To the Editor of the Bengal Asiatic Journal.)

Sir,

Although I think the prevalent humour of the day, which cannot tolerate any other than Greek and Roman names of genera in Zoology, is, in good part, absurd and pedantic, yet as I am told that continued non-compliance therewith on my part will be considered by most persons as a sort of excuse for past and future appropriations of my discoveries in this branch of science, as described in your Journal, I have now the pleasure to transmit to you a series of classical substitutes for my previous local designations. Many other new forms having originally received from me classical appellations (for I am no exclusionist) need not be here noticed: of those that were priorily described by local names the following enumeration supplies, on the left hand, the new

classical substitute, and, on the right, opposite thereto, the old vernacular term. A few explanations as well as dates are incorporated with the enumeration.

NEPAL,
February, 1841.

I am, Sir,
Yours faithfully,
B. H. HODGSON.

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1. *Muscicapidæ Eurglaiminæ,*

Simus (σιμος) *Raya*

May 1836. *Psarisoma*, Sw. *Crossodera*, Gould, in May and August 1837 respectively.

2. *Meliphagidæ.*

Alcopus (αλκη et πους) *Sibia*

See Jour. As. Society, January 1839.

3. *Falconinæ,*

Hyptiopus (υπτιος et πους) *Baza*

Journal December 1836, et May 1837.

4. *Buccoinæ,*

Comeris (κομη et ρις) *Sasia*

General structure of *Picumnus*, but three-toed, Analogue of *Apternus* et *Chrysonotus* in *Picianæ.*

5. *Sturnidæ Jeterinæ ? Ampelidæ Leiotrichanæ ?*

Heterornis (ετερος et ορνις) *Cutia*

Nearly allied to *Aplonis*, a subsequent genus of Gould; Journal December 1836, and February 1837.

6. *Charadriadæ.*

Pseudops (πςευδος et ωψ) *Carvanaca*

Has the Plover head (and structure generally) with a cultirostral bill.

Journal, December 1836.

7. *Mustelinæ ad finem.*

Mesobema (μεςος et βημα) *Urva*

Closely allied to *Helictis*, which however has Molars $\frac{5}{6}$, and is, in fact, a *Gulo.*

8-10. *Strigidæ*, Aberrant group,

Etoglaux (αετος et γλαυξ) *Huhúa.*

————Subtypical group.

Mesomorpha (μεσος et μορφη) *Urrua*

Meseidus (μεσος et ειδος *Bulaca*

Both from their strictly mediate structure between the most typical and most untipycal forms. Transac. 1836, Journal, May 1837.

11. *Coccothraustinæ*,

Dermophrys (δερμα et οφρυς) *Muniæ.*

12-13. *Columbidæ Vinaginæ*,

Rinopus (ρις et πους) —— *Ducula.*

Diagnosis being derived from combination of bill and feet belonging to *different* types.

Ditto, Ditto,

Romeris (ρομη et ρις) *Toria.*

14. *Sylviadæ? Certhiadæ? Melighagidæ?*

Polyodon (πολυς et οδων) *Yuhina*

A strange form. *Andropadus* its analogue among *Brachypods*, whilst it types the Honey-suckers among its own Sylvians.

Crateropodinæ.

Decurus (δεκα et ουρη) *Suya.*

15. *Saxicolinæ.*

Polypeira (πολυς et πειρα) *Dahila.*

Trans. As. Soc. 1836. This form since styled *Grîllioora* by Sw., and *Macrourus* by Gould.

16. *Merulidæ Crateropodinæ.*

Anura (αλφα privitiva et ουρη) *Tesia*

Since called *Micrura* by Gould. Journal Asiatic Society, February 1837.

17. *Ampelinæ*,

Prosorinia (προσω et ρις) *Cochoa.*

A typical ampeline form, though crested and not American, stands between *Ampelis* and *Casmarhynchus.*

18. *Meropidæ*,

Napophila (ναπος et φυλος) *Bucia*

This, or a very like form, since called *Nyctiornis* by Swainson; mine the prior appellation. Journal, June 1836. My bird is, in no way or degree, a night brid.

19-20. *Saxicolinæ?*

Chaitaris (χαιτη et ρις) *Miltava*

Dimorpha (δι et μορφη) *Siphia*

India Review, March 1837.

21. *Parianæ*,

Temnoris (τενμω seco et ρις) *Suthora*

The tiny stout bill is trincated and square at tip.

22-25. *Leiotrichanæ?*

Proparus (quasi *Parus*) *Minla.*

Philacalyx (φιεος et καλνξ) *Mesia.*

Calipyga (καλος et πυγη) *Bahila.*

Nearly allied to *Leiathrix* proper.

Hemiparus ($\frac{1}{2}$ Tit) *Siva.*

Indian Review, April and May 1837.

26. *Edolianæ.*

Creurgus (κρεουργος) *Tenthaca.*

Nearly allied to *Tephrodornis* and *Nylaus*, the last of which genera is of more recent date than ours.

27-29. *Cometes* (κομητης) *Chibia.*

Melisseus (Bee-taker) *Bhringa.*

Dicrurus (Auct) *Bhuchanga.*

Indian Review November 1836, and January 1837.

30. *Buccoidæ potius Yunxinæ*,

Piculus (diminutive of Picus) *Vivia*

Journal, February 1837, nearly allied to *Asthenurus.*

Supplementary Note to the Memoir on the Hodésum, vol. ix. *pp.* 694 and 783. *By Lieutenant* Tickell, *Political Assistant, Singbhoom.*

Through the kindness of Major Wilkinson, Resident at Burra Nagpoor, I am enabled to correct a mis-statement I made in my Memoir on the Ho Dèsum, in which speaking of the "Surrawûks" I described them as Bengallee Brahmins. They are, it appears, not Brahmins, but Jains, or worshippers of *Purusnat'h;* and are still scattered over several parts of India. In former times there were many of them at a place called Aring in Chutteesgurh, and some of their temples are there extant to this day.

Major Wilkinson describes the existence in Burra Nagpoor of the remains of a large city in the midst of the jungles on the banks of the Mahanuddee, the name of which was Seirpoor.* It flourished in the time of a race of Rajahs of the "Ho Ho Bunsee" tribe. These were Rajpoots, but the similarity of their name to that of the Koles of the present day ("Ho") is curious.

At Aring, Rajoo, and Dhunteree, Major Wilkinson fell in with several inscriptions on stone, in a character unknown to any persons in that quarter; and I trust he will be enabled to fulfil his present intention of sending some of these inscriptions to the Museum of the Asiatic Society; where there is a probability of their being decyphered, if facsimiles of them be published in this Journal.

Note.—I hope to be favoured with the note of a tour recently made by Major Ouseley through his Agency, in which mention is made of the extensive ruins above alluded to, and an interesting statistical account given of a region very little known.

* If I read it aright in his letter.

Proceedings of the Asiatic Society.

(Wednesday Evening, 7th April, 1841.)

The Hon'ble H. T. Prinsep, Esq., in the Chair.

The following gentlemen proposed at the Meeting of the 5th March last, were balloted for, and duly elected : viz.—

F. Beaufort, Esq. C. S.

W. B. Jackson, Esq. C. S.

W. Masters, Esq, Head Teacher, La Martiniere.

The necessary communication of their election, and rules of the Society for guidance, were ordered to be forwarded to the parties.

Library and Museum.

Cautley's Report on the Central Doab Canal, Allahabad Mission Press, 1840 (2 copies), ... 2

Lardner's Cabinet Cyclopœdia—Biography : Lives of the British Admirals, vol. 5th 1

History of the Mohammedan dynasties in Spain, by P. de Gayangos, London, 1840, vol. 1st 1

Sleeman's Report on the Depredations committed by the Thug Gangs of Upper and Central India, from 1836 to 1841, Calcutta, 1840, ... 1

Madras Journal of Literature and Science, No. 28, July—September, 1840, .. 1

Edinburgh New Philosophical Journal, by Professor Jameson, No. 58, October 1840, ... 1

London and Edinburgh Philosophical Magazine and Journal of Science, 3rd series, No. 3, November 1840, ... 1

Yarrell's History of British Birds, pt. 21st, London 1840, ... 1

Calcutta Monthly Journal and Repository of Intelligence for February 1841, .. 1

Annals and Magazine of Natural History, No. 36, November 1840, ... 1

Oriental Christian Spectator, February 1841, vol. ii. No. 2, Bombay, .. 1

Lectures on the Religious Practices and Opinions of the Hindus, by H. H. Wilson, Oxford 1840, ... 1

Proceedings of the Geological Society of London, vol. iii. Nos. 69, 70, 71, for 1840, ... 1

Bulletin de la Société de Geographie, 2nd Série, Tome 13th, Paris 1840, .. 1

Géographie D'Aboulfeda, Texte Arabe, 2nd Liv. Paris 1840, ... 2

Nieurve Proeve omal de Arabische, Letters en verdere schrijfteeke door Het Gewoon Europeesche Karakter onderscheidenlijk uit te drukken, Voorgesteld door, H. E. Weijers Ze Leyden 1840, ... 1

The following report was submitted by the Officiating Curator for the month of March last :—

'H. W. Torrens, Esq.,

Secretary Asiatic Society.

'Sir,

'I have to report for the month of March as follows :—

'*Geological, Palæontological, and Mineralogical Departments.*—We continue to catalogue and arrange here, at all spare times.

"The Analytical Index to papers on these subjects in the volumes of the Researches, Gleanings of Science, and Journal up to December 1840 is completed, and in the hands of the printers. By means of it, future Curators and students can refer backwards and forwards to papers or collections with great facility.

'In the Museum of Economic Geology, the collections in Class II (Iron); Class III (Tin); and Class IV (Copper); are arranged. I annex to this a draft of the plan upon which this part of the Museum should, I think, be arranged; and it will be seen at a glance that this system while it affords every convenience as to distinctness of classification, allows of additions to any extent, without disturbing that which is already done, and of every facility of reference for the student, visitors, and Curator, which are the main requisites in a Museum. The Catalogue to Class III (Tin) is circulated herewith, and I shall be glad to have the opinions and suggestions of Members upon this subject. Class I (Coal) and the other classes are not yet arranged for want of cases.

'*Mammalogical, Ornithological, Osteological, and Herpetological.*—Nothing new to report beyond the additions noticed below.

'Additions to the Museum have been as follows :—

'Dr. Spry. .... { Seven bottles Snakes and Lizards. / Five ditto water, from various parts of the Bay of Bengal. / An owl, Strix——? Skeleton prepared for the Museum.

'Mr. F. M. Bouchez.—A Monkey, Simnopithecus Entellus?—Stuffed.

'Lieut. Tickell.—Thirty-five Birds' skins.

'I am Sir,

'Your obedient servant,

'*Museum*, 31*st March*, 1841. 'H. Piddington,

'*Officiating Curator, As. Soc. Museum.*'

Plan of proposed Arrangement for the Museum of Economic Geology.

Class.	*Division. in Catalogue.*	*Marks.*	*Nos.*
I. Coal and Anthracites.	A. English	C.	1 to
	B. Indian and Asiatic	I. C.	1 to
	C. Foreign European	E. C.	1 to
	D. American	A. C.	1 to
II. Iron ores, Smelting, &c.	A. English	I.	1 to
	B. Indian and Asiatic	I. I.	1 to
	C. Foreign European	E. I.	1 to
	D. American	A. I.	1 to

III. Tinores, Flags, Smelting &c.	A. English	T.	1 to
	B. Indian and Asiatic	I. T.	
	C. Foreign European	E. T.	
	D. American	A. T.	

and so on, of as many classes as may be required, the marks and numbers being always, where possible, *painted* on the specimens, and the Catalogues printed or lithographed. H. P.

Mr. James Dodd, Assay Master of the Agra Bullion Department, having accepted the offer of Rs. 600 for his collection of Minerals, the following correspondence with Mr. Secretary Bushby took place:—

'To G. A. Bushby, Esq.

'*Secretary to Government, General Department.*

'Sir—With reference to my letters of dates quoted in the margin, I have the honor, by direction of the Asiatic Society, to state, that Mr. Dodd, Assay Master of the Agra Bullion Department, has a valuable collection of minerals, which it is considered highly deserving of purchase, to be placed in the Society's Rooms for general reference. The collection in question can be had for Rs. 600, and I am requested to submit the solicitation of the Asiatic Society to be authorized to make the purchase, the means being placed at the disposal of the Society, by a grant to that extent by the Government.

13th Nov. 1840; 18th Jan. 1841.

Asiatic Society's Rooms,

'15*th March* 1841.

'I have &c.

'H. Torrens, *Sec. Asiatic Soc.*

'To H. Torrens, Esq.,

'*Secretary to the Asiatic Society.*

'*Genl. Dept.*

'Sir—I am directed to acknowledge the receipt of your letter dated the 15th instant, and in reply to inform you, that before the Right Honorable the Governor General in Council can decide upon sanctioning the purchase of Mr. Dodd's collection of minerals, it would be satisfactory to His Lordship in Council to receive some general description of the collection in question.

'Council Chamber,

'24*th March*, 1841.

'I am, Sir,

'Your obedient servant,

'G. A. Bushby,

'*Secretary to the Government of India.*'

Ordered—That the Officiating Curator be requested to furnish the general description required, for submission to Government.

Read a letter from Mr. Secretary Bushby, of 10th February last, communicating that the Government consider the authority under which the payment of Rs. 300

per mensem is made to the Society for a Curator and the preparation of Specimens, as a sanction and modification of the allowance previously made to it, and not as an independent or additional assignment.

The Secretary brought to notice, for the opinion of the Meeting, the proposal made to him for the support of the Asiatic Society of Bengal for enabling Mons. Callery of Macao, to print a Chinese Dictionary, French and English, now compiling by him.

The meeting were of opinion, that as three Dictionaries in the Chinese language were already in the Library of the Society's Museum, it was not expedient to encourage the patronage solicited, but that a few copies of the work after completion might be purchased for the Library and presentation to the learned Societies in Europe, and that a recommendation at the same time should be submitted to the Government for the purchase by them of, say 25 or 30 copies for transmission to the Honorable the Court of Directors for their Library. It was accordingly Resolved—That a communication to the foregoing effect be made to Mons. Callery, through Mr. Hurry.

The Secretary also submitted a proposal for printing Wilford's Manuscript on the Ancient Geography of India to complete the 22d vol. of the Transactions of the Society, which proposal was negatived, on the consideration that though the paper contained much matter to be of interest to the general reader, yet in the opinion of the Society, the time had gone by for its publication ; productions of recent date from other authors on the same subject, containing more correct and valuable information, having superceded the object for which Wilford wrote, but that the Secretary was at liberty to use the Manuscript as Editor of the Asiatic Journal, by printing extracts of such portions of it as he considered desirable and useful for his object.

Read letter from Mr. Secretary Bushby, of 30th December 1840, and enclosures

'To H. Torrens, Esq.

'No. 995. '*Secretary to the Asiatic Society.*

'*General Department.*

'Sir—I am directed by the Right Honorable the Governor General in Council to transmit to you the accompanying copy of letter, No. 17 of 1840, from the Honorable the Court of Directors in the Public Department, dated the 16th September, and to request that the Society will enable the Government to carry into effect the wishes of the Honorable Court in respect to all Zoological and Entomological collections deposited in their Museum on the part of Government, or by persons conducting Missions on the part of the Government, and will assist the Government in giving effect to the commands of the Honorable Court in respect to future supplies to their Museum, as also in regard to the immediate dispatch of Dr. Helfer's and Captain Pemberton's Collections in Tenasserim and Bootan.

'I am also directed to transmit a copy of the list of the present contents of the Honorable Court's Museum as far as regards the Mammalia and Birds, that the Society may see the descriptions most desiderated.

'I am at the same time directed to request that the Asiatic Society will furnish this Department with a copy of Dr. HELFER's original list of his Ornithological collections, forwarded to the Secretary to the Society from the Political Department, with Mr. Secretary PRINSEP's letter, dated the 24th October 1838.

'I am, Sir,

'Your obedient servant,

'G. A. BUSHBY,

'*Secretary to Government of India.*

'COUNCIL CHAMBER,

'30*th December* 1840.

'No. 17 of 1840.

'OUR GOVERNOR GENERAL OF INDIA IN COUNCIL.

Public Dept.

Reply to Paras. 48 and 49 of letter from the Government of India, dated 21st August 1839, No. 26 and To letter from the Secretary to the Government of India, dated 19th January 1839, No. 2.

'1st. The first of these letters refers to an application made by MAJOR HAY, through the Asiatic Society of Bengal to you, to purchase a large collection of subjects of Natural History, formed chiefly in southern Africa, and of which you have justly remarked that it would be better adapted to the Museum of Europe than of India, we accordingly approve of your having declined the purchase.

2nd. In your letter of the 19th January 1839, you inform us that the collections made by Dr. HELFER in the Tenasserim Provinces have been shipped on the "Madagascar;" a reference to the correspondence accompanying shews that this is not exactly correct. The collections of Dr. HELFER and of Mr. Assistant Surgeon GRIFFITHS, which have been received by the "Madagascar," are exclusively Botanical, and the other collections were deposited with the Asiatic Society.

'3rd. We take this opportunity of expressing to you more fully our wishes on the subject of collections of Natural History made in India, on account of, or under the patronage, of the Government.

'4th. In our letter of the 18th September 1839, No. 17, Paras. 81 to 87, we replied to the applications which you made in August 1837, and in September 1838, on behalf of the Asiatic Society of Bengal; and we signified our consent to the monthly payment of 200 or 250 rupees to a qualified person to superintend the Museum, with an allowance of 50 rupees a month for the cost of preparing and preserving specimens besides the former allowance for the publication of Oriental works.

'5th. We now call your attention to several points respecting the relation in which the Asiatic Society is placed towards the Company's Museum in England in consideration of this grant. It appears from the public correspondence, as well as from the Journal of the Asiatic Society of Bengal, that the collections made by several Deputations and Missions on behalf of Government, which previous to the date of our despatch above mentioned (18th September 1839) were provisionally confided to the care of the Asiatic Society, have been detained in its custody nearly two years, during which period no Zoological collections have been received in our Museum from Bengal.

'6th. We refer here especially to the public letter of Dr. J. W. HELFER to Mr. Secretary PRINSEP, dated Calcutta 16th October 1838, and to a letter from Mr. Secretary PRINSEP, dated Fort William, 24th October 1838, to the Secretary of the Asiatic Society, and to the proceedings of the Asiatic Society of the 5th September, 10th October, and 14th November 1838, published in the Journal of the said Society, also respecting collections made during Captain PEMBERTON's Mission to Bootan, &c. Proceedings of the Asiatic Society of 7th February 1838, Journal p. 90 to 168, 5th September 1838, p. 749.

'7th. It is quite apparent that the detention of subjects of Natural History, in the state in which they are usually brought from Missions or Deputations, the movements of which are necessarily expeditious, must in the climate of India be highly injurious to them, and may in many cases occasion their entire destruction; we notice this particularly with reference to the collections made by Dr. HELFER in Tenasserim, and by Captain PEMBERTON during his Mission to Bootan, since both these are new localities from which no specimens are as yet contained in our Museum.

'8th. In order therefore to guard in future against similar detentions, and to secure an early dispatch of any collections made on behalf of Government to our Museum, we should wish you to require every naturalist or officer who may accompany any Mission or Deputation on behalf of Government, to make at least a provisional report on the nature and extent of his collections immediately on the return of the Mission, to be forwarded to us without delay; further, that whenever practicable, the same officer who accompanied a Mission be instructed on the arrival of his collections to select from his labors the most full and complete series for despatch to England for the Company's Museum by the earliest opportunity, and also to superintend in person the packing and despatch, in order to secure as far as possible the safety of the same during the voyage. In cases in which the collections may have been forwarded to the Presidency before the return of the naturalist by whom they have been made, and when any length of time may be expected to intervene before he can make a selection himself, we are of opinion that it may be expected of the Asiatic Society to make such a selection as is above intimated, and to prepare the same for despatch to England.

'9th. While these instructions apply chiefly to such collections as may be made in future on account of Government, we are likewise desirous that the necessary steps may be taken towards the immediate dispatch to our Museum of a series of the Mammalia and Birds collected by Dr. HELFER in Tenasserim, as far as his collections may have been preserved from the destructive effects of the climate, and of such subjects as may be new to science we desire the supply of several individuals; at the same time we direct that the entire of Dr. HELFER's Entomological collection may be forwarded to us, since from the locality which he visited, many valuable and interesting subjects may be expected in this department particularly; and since no copy of Dr. HELFER's list of his Ornithological collections, which according to a letter from Mr. Secretary PRINSEP, dated Fort William 24th October 1838, was forwarded to the Secretary of the Asiatic Society, has been found in our records, we direct that this list be transmitted to us with all possible expedition. The directions which we have now given respecting Dr. HELFER's collections in Tenasserim, apply also to such collections in Zoology as may have been made during Captain PEMBERTON's Mission on account of Government to Bootan.

'10. In connexion with these specific instructions, we deem it expedient to add a few general explanatory remarks, the object of which is to secure to our Museum in England, with every proper degree of economy respecting freight and packing expenses, the most valuable and interesting results of scientific Deputations and Missions on behalf of Government; we therefore repeat the recommendation, that on the return of any Mission to Calcutta the naturalist who may have made any collection, or a proper person to be appointed by you, be employed to prepare a single specimen, well preserved, of the more common Mammalia and Birds, such as are well known and described; of those that are rare, and especially of the newly discovered ones, several individuals. To afford the naturalist some assistance in this selection, we will supply a simple list of the present contents of our Museum as far as regards the Mammalia and Birds. By the plan thus recommended we shall become acquainted with the zoological productions of regions newly visited, and thus obtain materials for "Local Faunas," of which several instructive series already exist in our Museum. Of all Entomological collections we require that the entire result of any Deputation on behalf of Government be forwarded to our Museum, since these cannot be preserved in India under the disadvantages of imperfect cabinets, moisture, and general destructive effects of the climate; and being comprised in smaller space, their transmission is not expensive. These instructions will apply to all public collections made previous to the Mission of Dr. Helfer to Tenasserim, should any such be still detained in the hands of individuals, or remain deposited in the Botanic Garden of Calcutta, or in charge of the Asiatic Society.

'We are, &c.

'London. (Signed) W. B. Bayley,
'16*th September*, 1840. ,, George Lyall,
,, W. Astell,
,, H. Lindsay,
,, J. L. Lushington,
,, John Masterman,
,, J. W. Hogg,
,, J. Thornhill,
,, N. B. Edmonstone,
,, R. Campbell,
,, W. Wigram,
,, John Shepherd,
,, F. Warden.

(True Copy,) G. A. Bushby,
'*Secretary to Government of India.*'

List of Mammalia contained in the Museum of the East India Company.

Good Specimens of all QUADRUMANA are Desiderata in the Museum.

ORDO I.—PRIMATES.

TRIBUS QUADRUMANA.

	Genus Hylobates, ...	*Illiger.*
1	Hylobates syndactylus, ...	*Raffles, Sumatra.*
2	——-—— Hoolook, ...	*Harl. Assam.*
	Genus Semnopithecus, ...	*Fr. Cuv.*
1	Semnopithecus melalophus, ...	*Sumatra.*
2	———————— cristatus, ...	*Raff. id.*
3	———————— femoralis, ...	*id.*
4	———————— Pyrrhus, ...	*id.*
5	———————— maurus, ...	*id.*
6	———————— Entellus, ...	*Madras.*

GENUS PRESBYTES.

1	Presbytes mitrata. Eschsch, ...	*Voy. Kotzebue.*
	Semn. ? fascicularis, ...	*Raff. Sumatra.*
	Semn. comatus, ...	*Desm. Mamm.*

GENUS CERCOPITHECUS.

1	Cercopithecus Johnii, ...	*Madras.*

GENUS MACACUS. LACEP.

1	Macacus Sinicus, ...	*Java.*
2	———— cynomolgus, ...	*Linn. Siam.*
3	———— Silenus, ...	
4	———— nemestrinus, ...	*Sumatra.*
5	———— Assamensis, ...	*M'Clelland.*

LEMURIDÆ.

	* Genus Tarsius, ...	*Storr.*
1	Tarsius Bancanus, ...	*Banea.*
	Genus Nycticebus, ...	*Geoff.*
1	Nycticebus Javanicus, ...	*Java.*
2	———————— tardigradus, ...	*Siam.*

GENUS LEMUR.

1	Lemur ruber,	
	* * Galeopithecidæ,	
	Genus Galeopithecus,	
1	Galeopithecus varicgatus, ...	*Java, &c.*

TRIBUS CHEIROPTERA.

Specimens of all CHEIROPTERA are desired, both skins, and especially entire subjects, in Spirits.

	Genus Megaderma, ...	*Geoff.*
1	Megaderma Lyra, ...	*Java.*
	Genus Rhinolophus, ...	*Geoff.*
1	Rhinolophus affinis, ...	*Java.*
2	——— minor, ...	*id.*
3	——— nobilis, ...	*id.*
4	——— larvatus, ...	*id.*
5	——— vulgaris, ...	*id.*
6	——— deformis, ...	*id.*
7	——— insignis, ...	*id.*
8	——— Dukhunensis, ...	*Dukhun.*
	Genus Nycteris, ...	*Geoff.*
1	Nycteris Javanica, ...	*Geoff. Java.*
	Genus Nycticejus, ...	*Raffinesque.*
1	Nycticejus Temmenckii, ...	*Horsf. Java.*

GENUS VESPERTILIO.

1	Vespertilio adversus, ...	*Horsf. Java.*
2	——— Hardwickii, ...	,, *id.*
3	——— tralatitius, ...	,, *id.*
4	——— imbricatus, ...	,, *id.*
5	——— pictus, ...	*Linn. id.*
	Genus Molossus, ...	*Geoff.*
1	Molossus tenuis, ...	*Java.*
	——— dilatatus, ...	*id.*
	*Genus Cheiromeles, ...	*Horsf.*
1	Cheiromeles torquatus, ...	*id. Java.*

Particularly desirable.

	Genus Macroglossus, ...	*Fr. Cuv.*
1	Macroglossus rostratus, ...	*Java.*
2	——— nanus, ...	*Siam.*

GENUS PTEROPUS.

1	Pteropus edulis.	*Java, &c.*
2	——— Edwardsii, (Medius auctor), ...	*Dukhun.*
3	——— Assamensis, ...	*Assam.*
4	——— poliocephalus, ...	*Siam.*
5	——— marginatus, ...	*Siam.*
1	Pteropus (Pachysoma titthecheilum, ...	*Java.*

ORDO II.—FERÆ.

* Felidæ.

Species of Hyæna: *besides the vulgaris, are desirable.*

Genus Hyæna, ... *Briss, &c.*
1 Hyæna vulgaris, ... *Dukhun.*

Genus Felis.

1 Felis Tigris, ... *Linn. Dukhun.*
2 —— Leopardus, ... *Dukhun.*
3 —— Pardus, ... *Java, &c.*
4 —— Chaus, ... *Guldenst, Dukhun.*
5 —— Torquata, ... *Fr. Cuv. id.*
6 —— Javanensis, ... *Java.*
7 —— Sumatrana, ... *Sumatra.*
8 —— Bengalensis, ... *Bengal.*

The smaller species of Felis: *several rare species from the Upper Provinces.*

Genus Prionodon, .. *Horsf. Linsany, Tem.*

Prionodon.

1 Prionodon gracile, ... *Horsf. Java.*

?Indian species.

Genus Lutra, ... *Lin.*

Lutra.

1 Lutra Leptonyx, ... *Horsf. Java.*
2 ——— Nair, ... *Fr. Cuv. Dukhun.*

Desideratum.

Genus Mustela, ... *Linn.*
1 Mustela flavigula, .. *Hardwickii, Bengal.*

Genus Mangusta, ... *Olivier.*

Several new species are found near the Himalayas.

1 Mangusta Javanica, ... *Horsf. Java.*
2 ——— grisea, Herp. gr. Desm. *Dukhun.*
3 ——— Pharaonis, ... *Madras.*
4 ——— Auropunetata, .. *Hodgs. Assam.*

Genus Viverra.

Viverra: *Zibetha, Civetta, any new species?*

1 Viverra Zibetha, ... *Linn. Sumatra.*
2 ——— Rasse, ... *Horsf. Java, &c.*
3 ——— Indica, ... *Geoff. Dukhun.*
4 ——— Civetta, ... *Siam.*

Genus Paradoxurus. .. .. *F. Cuv.*

Paradoxurus, several Indian species.

1 Paradoxurus typus, ... *Java, &c.*

Genus Arctictis. Actides Valencienna. *Temm.*
1 Arctictis Binturong, ... *Sumatra.*

Genus Canis.

1 Canis familiaris, var. .. .. *Dukhun.*
2 —— pallipes, ... *Sykes, id.*
3 —— aureus, ... *Linn. id.*
4 —— Kokree, ... *Sykes, id.*
5 —— rutilans, ... *Temm. Java.*

The smaller species of Canis.

** URSIDÆ.

	Genus Ailurus, ...	*F. Cuv.*
Desideratum.	1 Ailurus fulgens, ...	*F. C. Nepaul.*
	Genus Prochilus, ...	*Illig.*
Prochilus one good specimen.	1 Prochilus ursinus, ...	*Illig. Dukhun.*
	Genus Helaretos Ursus aurt. ..	*Horsf.*
	1 Helaretos Malayanus, ...	*Horsf. Sumatra.*
	Genus Gulo, ...	*Storr.*
Gulo.	1 Gulo orientalis, ...	*Horsf. Java.*
	Genus Mydaus, ...	*F. Cuv.*
	1 Mydaus collaris, ...	*Bengal.*
Arctonyx.	Arctonyx collaris, ...	*F. Cuv.*
	2 ——— meliceps, ...	*id. Java.*

** TALPIDÆ.

	Genus Sorex, ...	*Linn.*
Sorex.	1 Sorex Indicus, ...	*Geoff.*
	2 ——— Sonerattii, ...	*Geoff.*
	**** Genus Tupaia, ..	*Raff.*
Tupaia.	1 Tupaia Javanica, ...	*Horsf. Java.*
	2 ——— ferruginea, ...	*Raff. Sumatra.*

ORDO III. UNGULATA.

	Genus Antilope, ...	*Pallas.*
	1 Antilope picta, ...	*Dukhun.*
Antelope. The new discovered species from the Himalayas.	2 ——— Bennettii, ...	*Sykes.*
	3 ——— Cervicapra, ...	*id.*
	4 ——— Hodgsonii, ...	*Bengal.*
	5 ——— Thar, ...	*Hodgs. id.*
	Genus Moschus, ...	*Linn.*
M. moschiferus, Des.	1 Moschus moschiferus, ...	*Nepal.*
Common.	2 ——— Javanicus, ...	*Java.*
	3 ——— Memima, ...	*Bengal.*
	Genus Cervus, ...	*Linn.*
Desiderat.	1 Cervus equinus, ...	*Rusa Sumatra.*
	2 ——— Duvancelii, ...	*Cuv. Horns. India.*
	3 ——— Muntjak, ...	*Java, Dukhun.*
	4 ——— porcinus, ...	*Assam.*
	Genus Tapirus.	
	1 Tapirus Malayanus.	
	Genus Manis, ...	*Linn.*
M. Crassicaudata.	1 Manis Javanica, ...	*Derm. Java.*
	2 ——— crassicaudata, ...	*Griff. Dukhun.*

ORDO IV. GLIRES.

	Genus Sciurus, ...	*Linn.*
All the species of Sciurus are desirable.	1 Sciurus maximus, ...	*Schr. Madras.*
	2 ——— Elphinstonii	*Sykes, Dukhun.*
	3 ——— Leschenaultii, ...	*Derm. Sumatra.*
	4 ——— bicolor, ...	*Sparr. Java.*
	5 ——— giganteus, ...	*M'Clelland, Assam.*
	6 ——— nigrovittatus, ...	*Horsf. Java.*
	7 ——— Finlaysonii, ...	*Horsf. Siam.*
	8 ——— affinis, ...	*Raff. Sumatra.*
	9 ——— tenuis, ...	*Horsf. Siam.*
	10 ——— Plantani, ...	*Lyung. Java.*
Desiderat.	11 ——— Palmarum, ...	*Briss. Dukhun.*
	12 ——— bivittatus, ...	*F. Cuv. Sumatra.*
	13 ——— insignis, ...	*F. Cuv. Java.*
	14 ——— hippurus, ...	*Geoff. Assam.*
	15 ——— Lokriah, ...	*Hodg. id.*
	16 ——— Lokrioides, ...	*Hodg. id.*
	17 ——— M'Clellandii, ...	*Horsf. id.*
Desiderat.	Genus Pteromys, ...	*Geoff.*
	1 Pteromys Petaurista, ...	*Desm. Bengal.*
	2 ——-—— nitidus, ...	*Siam.*
	3 ——-—— Diardii, ...	*Java.*
	4 ——-—— genibarbis, ...	*id.*
	5 ——-—— lepidus	*id.*
Common.	Genus Lepus, ...	*Linn.*
	1 Lepus nigricollis, ...	*F. Cuv. Dukhun.*
Desiderat.	Genus Hystrix, ...	*Linn.*
	1 Hystrix leucurus, ...	*Sykes.*
Very desirable.	Genus Mus, ...	*Linn.*
	1 Mus giganteus, ...	*Bengal.*
	2 —— setifer, ...	*Horsf. Java.*
	3 —— decumanoides, ...	*Temm. Bengal.*
	4 —— indicus, ...	*Siam.*

ORDO V.

Fam. Halicoridæ.

Genus Halicore.

1 Halicore Dugong, ..	*Raff. Sumatra.*

AVES.

ORDO I. RAPTORES. ILL.

FAM. II. VULTURIDÆ.

SUBFAM XXX.

Good Specimens of all the Raptores are desiderata, excepting a few of the most common species.

GENUS VULTUR.

1	Vultur Indicus, ...	*Lath, Dukhun.*
2	——— Ponticerianus, ..	*Lath, id.*
3	——— Bengalensis, ...	*Gmel. id.*
4	——— leuconotus, ...	*Bengal.*

Subfam. XXXXX.

GENUS NEOPHRON, SAV.

1	Neophron Perenopterus, ...	*Dukhun.*

FAM. III. FALCONIDÆ.

Subfam. X. Aquilina.

GENUS PANDION, SAV.

1	Pandion Ichthyætus, ...	*Java.*

GENUS HALIÆETUS, SAV.

Common. 1	Haliæëtus Ponticerianus, ..	*Java, Sumatra, &c.*
2	——— dimidiatus, ...	*Sumatra.*
3	——— albicilla, ...	*Raff. Sumatra.*
4	——— Macei, ...	*Assam*

GENUS LIMNŒTUS, VIGORS.

1	Limnœtus Horsfieldii, ...	*Java.*

GENUS AQUILA.

1	Aquila bifasciata, ...	*Dukhun.*
2	——— Vindhiana?	
3	——— pennata, ...	*F. pennata, Briss.*

GENUS SPIZAETUS, VIEILLOT.

1	Spizaetus rufitinctus, ...	*M'Clelland, Assam.*
2	——— cristatellus?	*Madras.*

GENUS HÆMATORNIS, VIG.

1	Hæmatornis Bacha, ...	*Java, Sumatra.*
2	——— undulatus, ...	*Vig. Nipal.*

xx. Subfam Accipitrina,

Genus Accipiter.

1 Accipiter Dukhunensis, .. *Sykes, Dukhun.*
2 ——— fringillarius, ... *Sumatra.*
3 ——— Soloensis, .. *Horsf. Java.*

Genus Astur Auct.

1 Astur Hyder, ... *Sykes, Dukhun.*

xxx Subfam Falconina.

Genus Hierax, Vigors.

1 Hierax cærulescens, ... *Java.*

Genus Falco.

1 Falco peregrinus, ... *Bengal.*
2 —— Tinnunculus, ... *Java.*
3 —— interstinctus, .. *M'Clelland, Assam, Madras.*
4 —— severus, ... *Horsf. Java.*
5 —— Chiquera, ... *Lath, Dukhun.*

Good Specimens generally are desiderata.

xxxx. Subfam Buteonina.

Genus Circus.

1 Circus pallidus, ... *Sykes, Dukhun.*
2 —— variegatus, ... *Sykes, Dukhun.*
3 —— melanoleucus, ... *Assam.*

xxxxx. Subfam Milvina.

Genus Milvus.

1 Milvus Govindo, ... *Sykes, Dukhun.*

Genus Elanus, Sav.

1 Elanus melanopterus, ... *Java, Siam, &c.*

FAM: IV. STRIGIDÆ.

x Subfam Nocturnina.

Genus Noctua, Sav.

1 Noctua Indica, ... *Dukhun.*
2 —— hirsuta, ... *Sumatra.*

xx. Subfam Bubonina.

Genus Ketupa, Lesson.

1 Ketupa Leschenaultii, ... *Siam.*
2 —— Ceylonensis, ... *Java.*

xxx. Subfam Assionina.

Genus Otus, Cuv.

1	Otus Bengalensis,	..	*Frauhl. Dukhun.*
2	—— Orientalis,	.. ..	*Horsf. Java.*
3	—— Lempige,	.. ..	*Horsf. id.*
4	—— rufescens,	.. ..	*Horsf. id.*

xxxx.—Subfam Strigidœ.

Genus Strix.

1	Strix Javanica,	.. ..	*Horsf. Java.*
2	—— badia,	.. ..	*Horsf. id.*
3	—— Selo puto,	.. ..	*Horsf. id.*
	Pagodarum,		*Temm.*
4	—— castanoptera,	..	*Horsf. id.*

ORDO II.—INSESSORES.

Tribus, I.—*Fissirostres.*

Fam. I.—*Meropidæ.*

Genus Merops, Linn.

Merops—all the Indian species. .. ..

1	Merops Javanicus,	.. ..	*Horsf. Java.*
	Savignii,		*Temm.*
2	——— Adansonii, ..	..	*Sumatra.*
3	——— urica,	.. ..	*Horsf. Java.*
4	——— viridis,		*Linn.*

Genus Nyctiomis, Swainson.

Particularly. .. .. 1 Nyctiomis Athertonii, ... *Assam.*

Fam: II. Hirunidœ.

Genus Cypselus.

Desiderat. .. ..

1	Cypselus comatus,	.. ..	*Siam.*
2	——— affinis,		*Hard and Gray, Dukhun.*
3	——— Klecho,	.. ..	*Horsf. Java.*
	longipennis,		*Temm.*
4	————————	..	*Sumatra.*

Genus Hirundo.

Desiderat. .. ..

1	Hirundo esculenta,	.. ..	*Java.*
2	——— fuciphaga,	.. ..	*id.*
3	——— filifera,	.. ..	*Dukhun.*
4	——— Sewan,	.. ..	*Sykes, id.*
5	——— concolor,	.. ..	*Sykes, id.*
6	——— erythropygia,	..	*Sykes, id.*
7	—— berevirostris,	..	*M'Clelland, Assam.*
8	——— brevicaudata,	..	*M'Clelland, id.*

Fam: III. Caprimulgidæ.

Genus Caprimulgus.

Desiderat.	1 Caprimulgus affinis, ...		*Horsf. Java.*
	2 ———— macrourus, ..		*Horsf. id.*
	3 ———— asiaticus, ...		*Madras.*
	4 ———— monticulus, ..		*Frank, Dukhun.*
	5 Caprimulgus Mahrattensis, ..		*Sykes, Dukhun.*

Genus Podargus.

Podargus, Continental species.	1 *Podargus* Javensis, ...		*Horsf. Java.*

Fam. IV. Todidæ.

Genus Eurylaimus, Horsf.

Desiderat.	1 Eurylaimus Horsfieldii ..		*Temm, Java.*
	2 ———— ochromalus, ..		*Raff. Sumatra.*
	3 ———— lunatus, ..		*Gould, Assam.*

Genus Eurystomus Vieill (Coloris Cuv.)

Common.	1 Euryetomus Orientalis. ..		*Java.*

Fam. V. Halcyonidæ.

Genus Dacelo, Leach.

Indian species.	1 *Dacelo* pulchella, ...		*Horsf. Java.*

Genus Halcyon, Swains.

Most of these are common. New species desirable.	1 Halcyon leucocephalus, ..		*Java.*
	2 ———— coromandelicus, ..		*id.*
	3 ———— chlorocephalus, ..		*id.*
	4 ———— Sacer, ...		*id.*
	5 ———— onmicolor, ...		*id.*
	6 ———— albicapillus, ..		*Sumatra.*
	7 Smyrnensis, ...		*Dukhun.*

Genus Alcedo.

Alcedo all the Continental species.	1 Alcedorudis, ...		*Linn. Dukhun.*
	2 ———— Bengalensis, ..		*Geml. id.*
	3 ———— Meninting, ..		*Horsf. Java.*
	4 ———— Biru, ..		*Horsf. id.*
5 *Desiderat.*	5 ———— Guttata,		*Gould, Siam, Bengal.*

Genus Ceyx.

	1 Ceyx tridactyla		*Java.*

Tribus II. Dentirostres,

Fam. I. Muscicapidæ.

Genus Muscipeta.

Common.	1 Muscipeta Indica, ..		*Stephens, Dukhun.*
	2 ———— Paradisii, ..		*id.*

Genus Phænicornis, Swains.

Desiderata. ....

1 Phænicornis flammea, .. *Java, Assam.*
2 ——— peregrina, .. *id.*
3 ——— princeps, ... *Gould, Assam.*
4 ——— elegans, ... *M'Clelland, id.*
5 ——— curvirostris, .. *Assam.*
6 ——— affinis, .. *Dukhun.*

Genus Muscicapa.

Muscicapa generally desirable.

1 Muscicapa Indigo, ... *Horsf. Java.*
2 ——— Bangumas, ... *Horsf. id.*
3 ——— obscura, ... } *Horsf. id.*
hirundina, .. }
4 ——— melanops, ... *Gould, Dukhun.*
5 ——— Poonensis, ... *Sykes, id.*
6 ——— cœruleocephala, .. *id.*
7 ——— picata, ... *Sykes, id.*
8 ——— capitalis, ... *M'Clelland, Assam.*
9 ——— cœrulea, .. *Sumatra.*

Genus Rhipidura, Vigors.

Desiderata. ....

1 Rhipidura Javanica, .. *Java.*
2 ——— fuscoventris, .. *Dukhun.*
3 ——— albipunctata,

Genus Cryptolopha, Swainson.

Cryptolopha—particularly.

1 *Cryptolopha* poiocephala.

FAM. II. LANIADÆ.

xx. Subfam: Dicrurinæ, Swains.

Genus Artamus, .. *Vieillot. Ocypterus, Cuv.*

Common.

1 Artamus leucorhynchus, .. *Java.*

Genus Diermus, ... *Vieillot.*

Common.

1 Dicrurus forficatus, .. *Java.*

Additional common species!

2 ——— cinereus, .. *Horsf. id.*
3 ——— Malabaricus, .. *id.*
4 ——— Balicassius, .. *Dukhun.*
5 ——— grandis, .. *Gould, Assam.*
6 ——— Rangoonensis, .. *Gould, id.*
7 ——— æneus, .. *Viell. id.*

Genus Tricophorus. Temm.

Desiderat. ....
1 Tricophorus barbatus, .. *Java.*
2 ——— flaveolus, .. *Gould, Assam.*

xxx. Subfam. Lanianæ. Swains.

Genus Hypsipetes, Vigors.

Desiderat. ....
1 Hypsipetes Ganesa, .. *Sykes, Dukhun.*
2 ——— psaroides, .. *Gould.*

Particularly. ....
3 ——— *M'Clellandii, Assam.*
4 ——— *gracilis,* .. *id.*

Genus Collurio, Vigors.

Other Continental species desirable.....
1 *Collurio* Bentet, .. *Horsf. Java.*
2 ——— Hardwickii, .. *Vig. Dukhun.*
3 ——— erythronotus, .. *id.*
4 ——— Schach, .. *id.*
5 ——— Lathora, .. *id.*

Genus Lanius, Auct.

Desiderat.
1 Lanius rufus, ... *Sumatra.*
2 ——— virgatus, .. *Temm. id.*
3 ——— muscicapoides, .. *Dukhun.*
4 ——— undularis ? .. *Dukhun.*

xxxx. Subfam Thamnophilina.

Genus Vanga.

1 Vanga coronata, .. *Vigors, Sumatra.*

xxxxx. Subfam Ceblepyrinæ, Swains.

Genus Graucalus, Cuv.

Common Desiderat.
Graucalus Papuensis, .. *Java, Dukhun.*
——— maculosus, *M'Clelland, Assam.*

Genus Ceblepyris, Cuv. Campephaga, Vieill.

Ceblepyris fimbriatus, .. *Temm. Java, Dukhun.*
——— canus, .. *Dukhun.*
——— striga, .. *Horsf. Java.*

FAM III. MERULIDÆ.

x. Subfam Myiotherina, Swains.

Genus Pitta, Temm.

All the species of Pitta are Desiderata.

1	Pitta cyanura,	..	*Java.*
2	—— gigas,	.. ..	*Temm. Sumatra.*
3	—— thoracina,	.. ..	*Temm. Sumatra.*
4	—— brachyuara,	..	*Madras.*
5	——	..	*Sumatra.*

Genus Cinclus, Bechst.

Desiderat.	....	1	Cinclus Asiaticus,	.. *Swains.*

xx. Subfam Merulinæ.

Genus Myophonus, Temm.

1	Myophonus glacuinus,	..	*Temm. Java.*
2	——·—— metallicus,	..	*Java.*
3	——·—— Temminckii,	..	*Gould, Bengal.*

Genus Cinclosoma, Vig.

Desiderat.	.. ..	1	Cinclosoma strigatum.	

Genus Turdus.

Common.	....	1	Turdus Saularis,	.. *Dukhun.*
		2	—— amænus,	.. *Java.*
		3	—— macrurus,	.. *Java.*
		4	—— vividis,	.. *Horsf. Java.*
		5	—— concolor,	.. *Horsf. id.*
		6	—— vacuis,	.. *Horsf. id.*
		7	—— ophiocephalus,	.. *id.*
		8	—— perspicellatus,	.. *Sumatra.*
		9	—— albicollis,	.. *Royle, Bengal.*
All these species are rare and Desiderata.		10	—— pœcilopterus,	.. *id.*
		11	—— melanocephalus,	.. *Sumatra.*
		12	—— cyanotus,	*Jard. and Selly, Bengal?*
		13	—— erythrogaster,	.. *Gould, id.*

Genus Ixos, Temm.

Desiderat.	....	1	Ixos cucullatus,	*Hooded Th. Lath, Bengal.*
		2	—— melanocephalus,	.. *Bengal.*
		3	—— chrysorhœus,	.. *Java.*
Common.	....	4	—— Cafer, Boolbool,	.. *Dukhun.*
		5	—— Psidii,	.. *Java.*
		6	—— Finlanysonii,	.. *Sumatra.*
		7	—— Jocosus,	.. *Dukhun.*

8 Ixos fulicatus, .. *Dukhun.*
9 —— bimaculatus, .. *Java.*
10 —— dispar, .. *Java.*

Genus Garrulax, Less. Ianthocin Gld.

Species of Garrulax, Lesson, *or Ianthocinii. Gould, are very desirable.* ....

1 Garrulax gularis, .. *M'Clelland, Assam.*
2 —— pectoralis, .. *Gould, id.*
3 —— lunaris .. *M'Clelland, Assam.*
4 —— albogularis, .. *Gould, Bengal.*
5 —— leucolophus, .. *id.*

Genus Geocichla.

1 Geocichla rubecola, .. *Bengal.*

Genus Zoothera, Vigors.

Rare and very desirable. 1 *Zoothera monticula,* .. *Bengal.*

xxx. Subfam Oriolina.

Genus Oriolus, Auct.

1 Oriolus Chinensis, .. *Linn. Java.*
2 —— Xanthonotus, .. *Horsf. Java.*
3 —— melanocephalus, .. *Siam, &c.*
4 —— Galbula, .. *Linn. Dukhun.*

Particularly. ....

5 —— *Kundii,* .. *Sykes, Dukhun.*
6 —— *Traillii,* .. *Gould, Cent., Assam*

Genus Irena, Horsf.

1 Irena Puella, *F. Cuv. Puella Lath, Java, Siam.*

xxxx. Subfam Cossyphina.

Genus Timalia, Horsf.

Species of Timalia generally desirable.

1 Timalia pileata, .. *Horsf. Java, &c.*
2 —— ? gularis, .. *Horsf. Java.*
3 —— Malcolmi, .. *Sykes, Dukhun.*
4 —— Somervillii, .. *Sykes, id.*
5 —— Chataræa, .. *Frankl. id.*
6 —— hypoleuca, .. *Frankl. Madras.*

xxxx.

Genus Petrocinela, Vigors.

Desiderata. ....

1 Petrocinela Pandu, .. *Sykes, Dukhun.*
2 —— Malab, .. *Sykes, id.*
3 —— cinchlorhyncha, .. *id.*

Fam IV. Sylviadæ.

Subfam x.

Genus Iöra, Horsf.

Additional species?

1 Iöra scapularis, .. *Java, Siam.*
2 —— Typhia,
3 —— meliceps, .. *Dukhun.*

Subfam xx.

Genus Brachypteryæ, Horsf.

Several India species of Brachypteryæ, *which have been indicated, are very desirable.*

1 Brachypteryæ montana, .. *Horsf. Java.*
2 ———— ? sepiaria, .. *id.*

Subfam xxx. Sylviana.

Genus Sylvia.

1 Sylvia Javanica, .. *Prinia, Java.*
2 —— montana, .. *Prinia, Java.*

Desiderat.

3 Sylvia Rama, .. *Sykes, Dukhun.*
4 —— Sylviella, .. *Sykes, id.*

Genus Prinia.

All the Continental species. ..

1 Prinia familiaris, .. *Horsf. Java.*
2 —— socialis, .. *Sykes, Dukhun.*
3 —— inornata, .. *Sykes, id.*

Gen. Zosterops, Vig. and Horsf. see below.

Genus Orthotomus, Horsf.

Desiderata.

1 Orthotomus sepium, .. *Horsf. Java.*
2 ——— Benetti, .. *Sykes, Dukhun.*
3 ——— Lingoo, .. *Sykes, id.*

xxxx. Subfam Motacillina.

Genus Motacilla, Auct.

1 Motacilla variegata, .. *Stephens, Dukhun.*
2 ——— Dukhunensis, .. *Sykes, id.*

Genus Budytes, Cuv.

1 Budytes flava (Mat flava,) .. *Java, Sumatra.*
2 ——— citreola (Mat. cit.) .. *Dukhun.*
3 ——— melanocephala, .. *Sykes, id.*
4 ——— Beema, .. *Sykes, id.*

Genus Enicurus, Temm.

Species of Enicurus desired. ....

1 Enicurus coronatus, .. *Temm. Java.*
2 ——— velatus, .. *Temm. id.*
3 ——— maculatus, .. *Gould, Bengal.*

Genus Anthus, Bechstein.

1 Anthus agilis, .. *Sykes, Dukhun.*
2 ———— ? .. *Sumatra.*

Genus Megalurus, Horsf.

Continental species ?

1 Megalurs palustris, .. *Horsf. Java.*
2 —— ——— ? ruficeps, .. *Sykes, Dukhun.*

xxxxx Subfam Saxicolina.

Genus Saxicola, Bechstein.

Desiderata. ..

1 Saxicola caprata. .. *Java, &c.*
2 ——— Rubicola, .. *Temm. Dukhun.*
3 ——— Rubicoloides, .. *Sykes, id.*
4 ——— bicolor, .. *Sykes, id.*
5 ——— erythropygia, .. *Sykes, id.*
6 ——— olivea, .. *M'Clelland, Assam.*

Genus Phænicura, Jard and Selby.

Desiderata.

1 Phænicura atrata, *Jard. and Selby, Dukhun.*
2 ——— frontalis, *Gould. Cent. Bengal.*
3 ——— cæruleocephala, .. *Gould. Cent. id*
4 ——— leucocephala, .. *Gould. Cent id.*
5 ——— Reevesii, .. *Gray, Assam.*

Genus Zosterops, Vigors and Horsf.

Additional Continental species ? ....

Zosterops Maderaspatanus, .. *Java.*

FAM V. PIPRIDÆ.

Genus Parus, Linn.

Several other Indian species are indicated.

1 Parus atriceps, .. *Horfs. Java.*
2 —— xanthogenus, *Vig. Gld. Cent. Dukhun.*
3 —— erythrocephalus, *Gld. Cent. Bengal.*
4 —— monticolus, .. *Gld. Cent. id.*
5 —— ——— .. *id.*

Genus Melanochlora.

Genus Melanochlora, Less. Parus. Laf. McClelland.

Particularly. ..

1 Melanochlora flavocristata, .. *Assam.*
Parus flavocristatus, *Lafr.*

Genus Calyptomena, Raff.

Particularly. .... 1 Calyptomen, viridis. .. *Raffl. Sumatra.*

Genus Leiothrix, Swainson.

Leiothrix is a very interesting Genus and all Indian species are Desiderata.

1 Liothrix lepida, .. *M'Clelland, Assam.*
2 ——— signata, .. *M'Clelland, id.*
3 ——— ornata, .. *M'Clelland, id.*

Tribus iii. Conirostres, *Cuv.*

I. FAM. FRINGILLIDÆ.

xx. Subfam Alaudina.

Genus Emberiza, Linn.

Desiderata. ....

1 Emberiza cristata, .. *Vigors, Dukhun.*
2 ——— subcristata, .. *Sykes, id.*
3 ——— malanocephala, .. *Sykes, id.*
4 ——— Cia, ... *Bengal.*

Genus Alauda, Linn.

1 Alauda Gulgula, .. *Frankl. Dukhun.*
2 ——— Deva, ... *Sykes, id.*

Genus Linaria.

Common. .... 1 Linaria Amandava, ... *Java.*

Genus Mirafra, Horsf.

Species of Mirafra desired. ....

1 Mirafra Javanica, .. *Horsf. Java.*
2 ——— *phœnicura*, .. *Frankl. Dukhun.*
3 ——— *Assamica*, .. *M'Clelland, Assam.*
4 ——— *flavelicollis*, *M'Clelland, id.*

XXX. Subfam Carduelina.

GENUS CARDUELIS, BRISS.

1 Carduelis caniceps, .. *Gould, Cent. Bengal.*
2 ——·—— spinoides, .. *id. id.*

GENUS PLOCEOUS, CUV.

1 Ploceus Philippensis, .. *Java.*
3 ——— Mangar, .. *Horsf. id.*

XXXX. Subfam Passernia.

GENUS FRINGILLA.

1 Fringilla punctularia, .. *Lcep. Linn. Java.*
2 ——— striata, .. *Ls. Linn. id.*
3 ——— oryzivora, .. *id.*
4 ——— Maja, ... *id.*
5 ——— crucigera, .. *Temm. Dukhun.*
Desiderat. .... 6 ——— Rhodopepla, ... *Gld. Cent. Bengal.*
7 ——— montana? .... *Sumatra.*

GENUS PASSER, AUCT.

1 Passer domesticus, .. *Briss. Dukhun.*

GENUS LONCHURA, SYKES.

1 Lonchura misoria, .. *Dukhun.*
2 ——— Cheet, .. *Sykes, id.*
3 ——— leuconota, .. *Sykes, id.*
Desiderat. .... 4 ——— sphura, .. *Java.*
5 ——— melanocephala, .. *M'Clelland, Assam.*

II. FAM STURNIDÆ.

XX. Subfam Sturnina.

GENUS STURNUS, LINN.

1 Sturnus vulgaris, .. *China.*

GENUS LAMPROTORNIS.

1 Lamprotornis, ... *Cantor, Java.*
Desideratum. .... 2 ——— *spilopterus,* .. *Gld. Cent. Assam.*
3

GENUS PASTOR, TEMM.

1 Pastor griseus, .. *Horsf. Java.*
2 —— Mahrattensis, .. *Sykes, Dukhun.*
3 —— capensis, .. *P. Jalla Horsf. Java.*
4 —— tricolor, .. *Horsf. id.*
Several other species of Pastor are indicated and a complete series is very much wanted. 5 —— tristis, .. *Gracula Linn. Dukhun.*
6 —— roseus, .. *Temm. Dukhun, &c.*
7 —— Pagodarusu, .. *Temm. id.*
8 —— cristatellus,
9 —— leucocephalus,

III. FAM CORVIDÆ.

xx. Subfam Corvina.

Genus Pica, Briss.

Magpie.

1 Pica erythrorhyncha, *Gmll. Linn. China.*
* 2 —— caudata, .. *Briss Ray, &c. Sumatra.*

Genus Dendrocitta, Gould.

Desiderata. ....

1 Dendrocitta Sinensis,
2 ———— vagabunda, .. *Assam.*
3 ———— leucogastra, .. *Gld. Madras.*
4 ———— frontalis, .. *M'Cld. Assam.*

Genus Kitta, Kuhl.

1 Kitta venatorius.

Genus Corvus, Auct.

Additional species.

1 Corvus Corone, .. *Sumatra.*
2 —— splendens, .. *Dukhun.*
3 —— culminatus, .. *id.*
4 —— Enca, .. *Horsf. Java.*

xxx. Subfam Coracina.

Genus Coracias, Linn.

Common. ....

1 Coracias indica, .. *Linn. Sumatra.*
2 ——— affinis, .. *McClelld. Assam.*

Genus Gracula, Auct. Eulabes Cuv.

1 Gracula religiosa, .. *Auct, Java, &c.*

Genus Crypsirina, Vieill.

Other species of Crypsirina? 1 Crypsirina, .. *Java.*

Genus Garrulus, Briss.

1 Garrulus lanceolatus, .. *Gld. China.*
2 ——— bispecularis, .. *Gld. Bengal.*

Genus Fregilus, Coracia Briss, Gray, Gm. Cuv.

1 Fregilus graculus, ... *Sumatra.*

IV. FAM BUCERIDÆ.

Genus Buceros.

Several recently discovered Indian species desired. ....

1 Buceros Rhinoceros, ... *Linn. Sumatra.*
2 —— undulatus, ... *Shaw, Java.*
3 —— Malabaricus, ... *Lath, id.*
4 —— cavetus? *Homrai, Hodgson, Sumatra.*
5 —— gingeanus, ... *Madras, &c.*

V. FAM LOXIADÆ, IGORS.

Genus Paradoxornis, Gould, Proceed. Zool. Soc.

Particularly.

1 Paradoxornis flavirostris, .. *Gould, Assam.*

TRIBUS IV.

II. FAM PSITTACIDÆ.

x. Subfam Psittacina.

GENUS PSITTACUS.

All the species of this Genus.

1 Psittacus sulphureus, .. *Sumatra.*
2 —— ornatus, .. *Sumatra.*

xxxx. Subfam. Palæorninia.

GENUS PALŒORNIS, VIGORS.

Species of Palæornis generally desired.

1 Palæornis Pondicerianus, .. *Java, &c.*
2 —— torquatus, ... *Sumatra.*
3 —— flavitorquis, .. *Shaw.*
4 —— Malaccensis, .. *Java.*
5 —— melanorhynchus, .. *Sykes, Dukhun.*
6 —— schisticeps, .. *Bengal.*
7 —— erythiocephalus, .. *China.*

xxxxx. Subfam Psittaculina, Vigors.

GENUS PSITTACULA, KUHL.

Additional species.

1 Psittaculina Galguila, .. *Java.*

III. FAM PICIDÆ.

GENUS BUCCO.

Additional species desirable? ....

1 Bucco Javensis, .. *Horsf. Java.*
2 —— roseicollis, .. *id.*
3 —— Philippensis, ..
4 —— australis, .. *Horsf.*
5 —— versciolor, .. *Raff. Sumatra.*
6 —— de Mainas, .. *Temm. Sumatra.*
7 —— Lathamii, .. *id.*
8 —— caniceps, .. *Dukhun.*
9 —— corvinus, .. *id.*
10 —— grandis, .. *Sumatra.*
11 —— cyanops, .. *Cuv. Assam.*

GENUS PICUS.

A complete series of the Continental species of Picus *desirable.*

1 Picus leucogaster, .. *Temm. Java.*
2 —— pulverulentus, .. *Temm. id.*
3 —— dimideatus, .. *Temm. id.*
4 —— Goensis, .. *Lath. id.*
5 —— miniatus, .. *Gmel. id.*
6 —— puniceus, .. *Horsf. id.*
7 —— analis, .. *Temm. id.*
8 —— poicilolophus, .. *Temm id.*
9 —— badius, .. *Raffl. Sumatra.*
10 —— Mahrattensis, .. *Lath. Dukhun.*
11 —— nuchalis, .. *Wagler, Bengal.*
12 —— squamatus, .. *Gould, Bengal.*
13 —— hyperythrus, .. *Gould, Bengal.*
14 —— brunifrons, .. *Gould, Bengal.*
15 —— Himalayanus, .. *Jardin, Bengal.*
16 —— strenuus, .. *Gould, Assam.*
17 —— occipitalis, .. *Gould, Cent. id.*
18 —— Nepalensis, .. *Gray and Hard. id.*
19 —— Macei, .. *id.*

Pedibus Tridactylis.

Genus Chrysonotus, Swains.

Additional species?
1 Picus Chrysonotus, .. *Grant, Assam.*
2 —— tiga, .. *Horsf. Java.*

Genus Yunx, Linn.

1 Yunx torquilla, .. *Linn. Assam, &c.*

IV. FAM CERTHIADÆ.

Genus Upupa, Auct.

Upupa minor, .. *Shaw, Dukhun.*

Genus Tichodroma.

1 Tichodroma erythroptera, .. *China.*

Genus Sitta, Linn.

Other species of Sitta are recorded.
1 Sitta frontalis, .. *Horsf. Java.*

V. FAM. CUCULIDÆ.

Genus Coccyzus, Vieill.

Desideratum. .... 1 Coccyzus chrysogaster, .. *Java.*

Genus Leptosomus.

1 Leptosomus Afer, .. *Dukhun.*

Genus Endynamis, Vig. and Horsf.

1 Endynamis orientalis, .. *Java, &c.*

Genus Cuculus, Auct.

All the Indian species.
1 Cuculus fugax, .. *Horsf. Java, &c.*
2 —— flavus, .. *Gmel. id.*
3 —— canorus, .. *id.*
4 —— Pravata, .. *Linn. id.*
5 —— lugubris, .. *Horsf. id.*
6 —— xanthorhynchus, .. *Horsf. id.*
7 —— basalis, .. *Horsf. id.*
8 —— Nepalensis, .. *Gould, Bengal.*
9 —— Indicus, ..

Genus Centropus, Illig.

Centropus and Phœnicophaus.
1 Centropus lepidus, ..*Horsf. Java, Assam.*
2 —— Philippensis, .. *Cuv. id. id.*

Genus Phœnicophaus. Vieill.

1 Phænicophaus Rouverdin, .. *Java.*
2 —— lucidus, .. *Vig. Sumatra.*
3 —— tristis, .. *Lesson, Assam.*

Genus Trogon, Linn.

Desideratum. ..
1 Trogon Duvancelii, .. *Temm. Sumatra.*
2 —— *Hodgsonii*, .. *Gould. Assam.*

Tribus Tenuirostres, Cuv. Fam. Cinnyridæ.

Genus Cinnyris, Cuv. Nectarrina Illig.

Indian species generally.

1 Cinnyris lepida, .. *Java, &c.*
2 ——— pectoralis, .. *Horsf. Java.*
3 ——— eximia, .. *Horsf. id.*
4 ——— currucaria, .. *Linn. Dukhun.*
5 ——— Vigorsii, .. *Sykes, id.*
6 ——— minima, .. *Sykes, id.*
7 ——— Mahrattensis, .. *Shaw, id.*
8 ——— concolor, .. *Sykes, id.*
9 ——— Peronii, .. *Siam.*
10 ——— Assamensis, .. *M'Clelland, Assam.*
11 ——— Labecula, .. *M'Clelland, id.*

Genus Arachnothera, Temm.

Desiderata. ....

1 Arachnothera inornata, .. *Temm. Java.*
2 ——— longirostria, .. *id.*

Genus Dicœus, Cuv.

Desiderata. ....

1 Dicœum cruentatum, .. *Java.*
2 ——— erythronotum, .. *Assam.*

FAM. MELIPHUGIDÆ.

Genus Chloropsis.

Desiderata. ....

2 Chloropsis Cochinchinensis, .. *Java, &c.*
2 ——— chrysogaster, *M'Clelland, Assam.*

Genus Pomatorhinus, Horsf.

Desiderata. ....

1 Pomatorhinus montanus, ..*Horsf. Java, Assam.*
2 ——— Horsfieldii, .. *Sykes, Dukhun.*
3 ——— erythroginys, .. *Gould, Bengal.*

ORDO III.—Rasores, Illiger.

1 Fam Columbidæ.

Genus Vinago, Cuv.

Additional species of Arachnotheri Dicœum Chloropsis *and* Pomatorhinus *particularly desirable.*

1 Vinago veruans, .. *Java, &c.*

Genus Ptilinopus, Swains.

1 Ptilinopus Elphinstonii, .. *Sykes, Dukhun.*

Genus Columba, Linn.

Species of Vinago, Ptilinopus *and* Columba *are Desirable.*

1 *Columba* alba, *Linn.* } *Temm. Java.*
Columba titorulis, .. }
2 ——— melanocephala, .. *Gm. id.*
3 ——— tigrina, .. *Temm. id.*
4 ——— risoria, .. *Linn. id.*
5 ——— Bantamensis, .. *Sparm. id.*
6 ——— bitorquata, .. *Temm. id.*
7 ——— Javanica, .. *Temm. id.*
8 ——— Amboinensis, .. *Linn. id.*
9 ——— ænea, .. *Linn. id.*
10 ——— Jamboo, .. *Gmel. Sumatra.*
11 Aleena, .. *Sykes, Dukhun.*
12 humiles, .. *id.*
13 ænas, .. *id.*
14 cambaginus, .. *id.*

II. FAM PHASIANIDÆ.

Genus Pavo, Linn.

1 Pavo cristatus, .. *Linn. Dukhun.*
2 —— muticus, .. *Temm. Java.*

Genus Polyplectron, Temm.

Desideratum. .... 1 Polyplectron bicalcaratus, .. *Sumatra.*

Genus Lophophorus, Temm.

1 Lophophorus Impeyanus, .. *Bengal.*

Genus Gallus, Briss.

Other Indian species?
1 Gallus furcatus, .. *Temm. Java.*
2 —— Bankiva, .. *Temm. id.*
3 —— Soneratii, .. *Dukhun.*
4 —— giganteus, .. *id.*
5 —— domesticus, .. *id.*

Genus Euplocomus.

Desiderat. ....
1 Euplocomus erythrophthalmus, .. *Sumatra.*
2 —— ignitus, .. *Temm. Sumatra.*

Genus Phasianus.

All the continental species. ....
1 Phasianus albocristatus, .. *China.*
2 —— leucomelanos, .. *Assam.*
3 —— Pucrasia, .. *China.*

Genus Argus, Temm.

1 Argus giganteus, .. *Temm. Sumatra.*

Genus Tragopan, Cuv.

Additional species. .. 1 Tragopan cornutus, .. *Bengal.*

Genus Numida.

1 Numida Meleagris, .. *Domestic in Dukhun.*

III. FAM TETRAONIDÆ.

Genus Cryptonyx.

1 Cryptonyx cristatus, .. *Sumatra.*
2 —— ocellatus, .. *id.*

Genus Coturnix, Cuv.

A complete series of the Genera of this family desirable, ...
1 Coturnix sinensis, .. *Java.*
2 —— dactylisonans, .. *Dukhun.*
3 —— textilus, .. *id.*
4 —— Argoondah, .. *Sykes, Dukhun.*
5 —— Pentah, .. *Sykes, id.*
6 —— erythrorhyncha, .. *Sykes, id.*

Genus Perdix, Briss.

1 Perdix Javanica, .. *Horsf. Java.*
2 —— personata, .. *Horsf. id.*
3 —— curvirostris, .. *Sumatra.*
4 —— picta, *Jard and Selby, Dukhun.*
5 —— oculea, ..
6 —— Chukur, .. *Bengal.*

GENUS FRANCOLINUS.

1 Francolinus spadiceus, .. *Dukhun.*
2 ——·—— Ponteceriauus, .. *id.*
3 ——·——· cruentus, .. *Bengal.*
4

GENUS PTEROCLES.

1 Pterocles quadricinctus, .. *Temm. Dukhun.*
2 ——— exustus, .. *Temm. Dukhun.*

GENUS HEMIPODIUS, TEMM.

1 Hemipodius Luzonieusis, .. *Java.*
2 ——·—— pugnax, .. *Dukhun.*
3 ——·——· Dussumier, .. *Temm. id.*
4 ——·——· Taigoor, .. *Sykes, id.*

IV. FAM STRUTHIOMDÆ.

GENUS OTIS, LINN.

Desideratum. ....
1 Otis nigriceps, .. *Gould, Dukhun.*
2 —— fulva, .. *Sykes, id.*

ORDO IV. GRALLATORES.

I. Fam Gruidæ.

GENUS GRUS, PALLAS.

1 Grus cinerea, ... *Bengal.*

II. FAM ARDEIDŒ.

GENUS ARDEA.

Good specimens of the Genera Grus, Ardea *and* Ciconia *desired.*
1 Ardea cinerea, .. *Linn. var. Java.*
2 —— purpurea, ... *Linn. id.*
3 —— Egretta, .. *Gmel. Java, Dukhun.*
4 —— Garzetta, .. *Linn. id. id.*
5 —— russata, ... *Temm. Java.*
6 —— Malaccensis, .. *Gmel. id.*
7 —— speciosa, ... *Horsf. id.*
8 —— Sinensis, .. *id.*
9 —— flavicollis, ... *Lath. id.*
10 —— Javanica, ... *id.*
11 —— cinnamomea, .. *Gmel. id.*
12 —— Caboga, ... *Pemn. Dukhun.*
13 —— Grayii, .. *Sykes, id.*
14 —— gularis, ... *Siam.*

GENUS BOTAURUS, BRISS.

1 Botaurus stellaris, .. *Bengal.*

GENUS NYCTICORAX, STEPHENS.

1 Nycticorax Europæus, .. *Java, Dukhun.*

GENUS CICONIA.

Ciconia Argala(*Adjutant,*) *a good specimen desired!*
1 Ciconia capillatta, .. *Temm. Java.*
2 ——— lencocephala, .. *Java.*

GENUS PHÆNICOPTERUS.

1 Phænicopterus ruber, .. *Linn. Siam.*

GENUS MYCTERIA, LINN.

1 Mycteria australis, .. *Bengal.*

GENUS PLATALEA, LINN.

1 Platalea leucorodia, .. *Linn. Dukhun.*

GENUS ANASTORNUS, ILLIGER.

1 Anastornus typus, .. *Linn. Dukhun.*

GENUS TANTALUS, LINN.

1 Tantalus leucocephalus, .. *Lath. Dukhun.*

GENUS IBIS, LACEP.

1 Ibis religiosa, ... *Cuv. Dukhun.*
2 —— ignea, ... *id.*
3 —— papillosa, ... *Temm. id.*
4 —— falcinella, ... *Temm. id.*

III. FAM SCOLOPACIDÆ.

GENUS NUMENIUS, BRISS.

Desiderata.
1 Numenius Phœopus, .. *Java.*

GENUS TOTANUS, BECHSTEIN.

A series of this Genus.
1 Totanus affinis, .. *Horsf. Java.*
2 —— hypoleucos, .. *Temm. id.*
3 —— acuminatus, .. *Horsf. id.*
4 —— tenurostris, .. *Horsf. id.*
5 —— Damacensis, .. *Horsf. id.*
6 —— Glottis, .. *Bechst. id.*
7 —— ochropus, .. *Temm. Dukhun.*
8 —— Glareola, .. *Temm. id.*

GENUS LIMOSA, BRISS.

Desiderata.
1 Limosa melanura, .. *Java.*
2 —— Terek, .. *Temm. id.*
3 —— Horsfieldii, .. *Sykes, Dukhun.*
4 —— Glottoides, } *Sykes, id.*
Totanus Glottoides, } *Gould.*

GENUS SCOLOPAX, LINN.

1 Scolopax saturata, .. *Horsf. Java.*

GENUS GALLINAGO, RAY.

Other Indian species of Scolopax and Gallinago.
1 Gallinago media, .. *Java, Dukhun.*
2 —— minima, .. *Dukhun.*

GENUS RHYNCHÆA, CUV.

Desideratum.
1 Rhynchæa orientalis, .. *Horsf. Java.*
2 —— pieta, .. *Gray, Dukhun.*

GENUS PELIDNA, CUV.

Desideratum.
1 Pelidna Temminckii, .. *Stephens, Dukhun.*

GENUS TRINGA, LINN.

Desideratum.
1 Tringa subarquata, .. *Temm. Java.*

GENUS SREPSILAS, ILLIGER.

Desideratum.

1 Strepsila collaris, .. *Temm. Sumatra,*

IV. FAM RALLIDÆ.

GENUS PARRA, LINN.

1 Parra superciliosa, .. *Horsf. Java.*
2 —— Sinensis, .. *Gmel. Dukhun.*

GENUS GLAREOLA, BRISS.

Other Continental species.

1 Glareola orientalis, .. *Leach, Java.*

GENUS RALLUS, LINN.

Desideratum.

1 Rallus gularis, .. *Horsf. Java.*
2 —— fuceus, .. *Linn. id.*
3 —— A kool, .. *Sykes, Dukhun.*

GENUS GALLINULA, BRISS.

Continental species.

1 Gallinula lugubris, .. *Horsf. Java.*
2 —— chloropus, .. *id.*
3 —— Javanica, *Horsf. Java, Dukhun.*
4 —— superciliosa, .. *Temm. Java.*

GENUS PORPHYRIO, BRISS.

1 Porphyrio smaragdinus, .. *Java, Dukhun.*

GENUS FULICA.

1 Fulica atra, *Linn. Java, Dukhun.*

V. FAM CHARADRIADÆ.

GENUS VANENLUS, BRISS.

Desiderata.

1 Vanellus melanogaster, .. *Java.*
2 —— tricolor, .. *Horsf. id.*
3 —— Goënsis, .. *Steph. Dukhun.*
4 —— bilobus, .. *id.*

GENUS CHARADRIUS.

Indian species generally.

1 Charadrius cantiarius, .. *Lath. Java.*
2 —— pluvialis, .. *Linn. id.*
3 —— Asiaticus, .. *Gmel. id.*
4 —— pusillus, .. *Horsf. id.*
5 —— Phillippensis, .. *Lath. Dukhun.*

GENUS CURSORIUS, LATH.

1 Cursorius Asiaticus, .. *Lath. Dukhun.*

GENUS HIMANTOPUS, RAY.

1 Himantopus melanopterus, .. *Java, &c.*

GENUS ÆDICNEMUS, CUV.

1 Ædicnemus crepitans, .. *Dukhun.*

ORDO V. NATATORES.

A series of Indian Natatores *generally desirable.*

I Fam Anatidæ, Leach.

GENUS PLECTROPTERUS, LEACH.

1 Plectropterus melanotos, .. *Dukhun.*

GENUS ANSER, BRISS.

1 Anser Girra, .. *Dukhun.*

GENUS TADORNA, LEACH.

1 Tadorna rutila, .. *Steph. Dukhun.*

GENUS ANAS, AUCT.

1 Anas strepera, .. *Linn. Dukhun.*

GENUS RHYNCHAPSIS.

1 Rhynchapsis viresceus, .. *Dukhun.*

GENUS MARECA.

1 Mareca pæcilorhyncha, .. *Steph. Dukhun.*
2 ——— fistularis, .. *id.*
3 ——— Ardsuro, .. *Sykes, id.*
4 ——— Arcuata, .. *Cuv. Java.*

GENUS QUERQUEDULA.

1 Querquedula Circia, .. *Dukhun.*

GENUS MERGUS, LINN.

1 Mergus Merganser, .. *Bengal*

II. FAM. COLYMBIDÆ.

GENUS PODICEPS, LATH.

1 Podiceps minor, .. *Java.*
2 ——— Philippensis, .. *Dukhun.*

III. FAM ALCADÆ.

GENUS APTENODYTES, FORST.

1 Aptenodytes, .. *Southern Ocean.*

IV. FAM PELECANIDÆ—LEACH.

GENUS PELECANUS.

1 Pelecanus onocrotalus, .. *Java.*
2 ——— Javanicus, .. *Horsf. id.*

GENUS PHALACROCORAX, BRISS.

1 Phalacrocorax Javanicus, .. *Java.*

GENUS SULA, BRISS.

1 Sula communis. .. *Siam.*

GENUS TACHYPETES, VIEILL.

1 Tachypetes Aquilus, .. *Siam.*

GENUS PHAETON, LINN.

1 Phaëton æthereus,

GENUS PLOTUS, LINN.

1 Plotus melanogaster, *Gml. Java, Dukhun.*

V. LARIDÆ—LEACH.

GENUS STERNA, LINN.

1 Sterna minuta, .. *Linn. Java.*
2 ——— Javanica, .. *Horsf. id.*

3 Sterna media,	..	*Horsf. id.*
4 —— grisea,	..	*Horsf. id.*
5 —— affinis,	..	*Horsf. id.*
6 —— acuticauda,	..	*Gray, Dukhun.*
7 —— similis,	..	*Gray, Dukhun.*
8 —— Seena ?	..	*Sykes, Dukhun.*

Genus Diomedea, Linn.

1 Diomedea exulans.
2 —— fuliginosa.

Genus Procellaria, Auct.

1 Procellaria Capensis,
1 —— æquinoctialis.

Remarks.

In the preceding list, subjects of which specimens are particularly desirable have been indicated in the margin: of these several specimens will be useful. The more common species have also been indicated, and of these a single specimen, in good condition, especially in an extensive series or to complete a *local Fanna*, will be sufficient. The Court's wishes respecting collections for the Company's Museum have been generally expressed in the public letter; a few explanatory remarks are now added. The list exhibits a general view of the present contents of the Company's Museum in Mammalia and Birds, and its chief object is to direct Naturalists in India to the discovery of new species, and to the supply of such as are still wanting in the Museum. Respecting Mammalia generally, it may be observed that specimens of all the smaller species in good condition will be desirable; but the Court particularly recommend a very close and persevering search respecting the family of *Chiroptera* or *Bats*. The list contains only a small number of Indian Bats, and the Court are most anxious to obtain a large addition of subjects of this family to complete that series. Very few of the Bats of Continental India have as yet been collected, and a general, careful, zealous search is strongly requested and recommended.

Of the family of Quadrumana, a general supply of good specimens will also be desirable, especially of the Genera Hylobates, Semnopithecus, Macacus; also of the allied Genera Lemur, Tarsius, and Galeopithecus. Among the Feræ the smaller species of Felis, Mustela, Mangusta, Viverra, Arictitis (or Ictides,) Canis, Ailurus, Arctonyx, &c. are requested; and of the larger species good specimens only of rare or newly discovered subjects. These remarks also apply to the order of the Ungulata, and among these, especially to the Genera Antilope, Moschus, Cervus, &c. Of the order of Glires or Rodentia, which are generally small, the Court will be glad to receive series as complete as possible of the species of all the genera, namely, Sciurus, Pteromys, Lepus, Mus, &c. &c.

Respecting Birds, the Court would direct particular attention to those Genera which are marked in this list. Several of these have only recently been discovered, and they are of great value and interest in science: additional specimens will be very welcome, and also new species of these, or of previously known Genera.

The Officiating Curator having been requested to furnish his Report on the foregoing papers, submitted the following :—

H. W. Torrens, Esq.

Secretary, Asiatic Society.

Sir,

In obedience to the desire of the Committee of Papers, confirmed by the Society at its meeting of the 5th instant, I have the honour to submit my report on the matters relative to the Museum, forming the subject of the letter of the Honorable the Court of Directors, No. 17 of 1840, under date 16th September, 1840, and that of the Society to the Government of India, General Department, transmitting the former to you, date 31st December 1840. For more distinct explanation, it may be convenient to state what these matters are :—

I.—The relation in which the Society now stands towards the Honorable the Court.

II.—Inquiry for various collections assumed to have been detained at the Society's rooms : especially those of Dr. Helfer and Capt. Pemberton.

III.—The assistance which may be afforded by the Society to facilitate the early dispatch of collections made by Government Officers.

IV.—Assistance which may be afforded by the Society towards the completion of the Honorable Court's Museum.

The feeling of the Society, and my own views on this head, are, I submit,

I. The relation in which the Society now stands towards the Honorable the Court.

fully expressed by the Resolution which I had the honor to propose, and which was unanimously carried at the January meeting of 1841, (see Journal No. 105, p. 943,) and which for ready reference, I copy here.

"The Officiating Curator reported, that a considerable number of duplicate specimens, principally of birds, &c. were available for transmission to Europe ; and he moved,—that as many specimens of great interest to Naturalists might be collected, prepared and sent to England at a small expence, it was worthy the attention of the Society, whether such might not be prepared and sent to the Honorable the Court of Directors, as due to them from the Society."

The Society therein adopting this resolution, has fully testified its earnest desire to acknowledge, in every possible way which can tend to the general advancement of science, the liberal assistance which the Honorable the Court has been pleased to extend to it. I may also here, perhaps, refer to my report for the past month, (approved by the Society), in which, after proposing a second dispatch of duplicates to the Honorable the Court, I have ventured further to suggest to their Curator, how we can mutually assist each other, as follows :—

"I may suggest here, that we point out to the Curator of the Museum of the Honorable the Court of Directors the great facility with which, if approved of by the Court, he might procure in exchange for such specimens as he already possesses, some of the many which we require for the Museum of Economic Geology. It is scarcely possible to send home a skin of a bird, a skeleton, or a scull from India, for which some duplicate may not be obtained in exchange, which would be of utility to us here."

II.—Inquiry for various collections supposed to have been detained at the Society's Rooms, especially those of Dr. Helfer and Capt. Pemberton.

My report on Dr. Helfer's collection will I trust have satisfactorily shewn that, with respect to them, the Society is exonerated from all blame. I omitted in it to refer to the Entomological part. On careful inquiry, I find that no collection of insects was, at any time, deposited at the Society's Rooms by Dr. Helfer. Specimens of the moth cocoon, &c. of the Assam silk worms, were only presented by him to illustrate his paper on that subject.

With reference to Capt. Pemberton's collection, you will not fail to remark, that the collections referred to in those passages of the proceedings quoted in the Honourable the Court's letter, are collections placed "*in deposit*" only, and consequently, I shall infer, held by the Society at the disposition of the depositor, who evidently by his letter, at p. 749 of the Journal, *is* there disposing of them; since he says, that "under instructions from Government he presents to the Society 145 specimens of birds, a selection from the Bootan collection, &c."

Further: The collections deposited by Captain Pemberton were packed at the Museum, and in February 1840 sent to the Marine Board, for shipment to England, in four cases. Upon reference to Mr. Greenlaw, who has kindly referred to the agents of the *Shepherdess*, the vessel on which the cases were shipped, I learn that she did not arrive in England till the month of December; the Honourable Court's letter, it will be observed, bears date the 16th September 1840.

This is what I have been able to ascertain from the assistants and taxidermists at the Museum, and from Capt. Pemberton's official letter; in addition to which I may state, that from the description of the assistants, the four cases were about equal to half or three-quarters of a ton of measurement. Mr. Greenlaw has no knowledge of their size, as freight was to be paid at home.

I have referred to Dr. McClelland, who has furnished me with Mr. Greenlaw's receipt, but he has not replied to my official letter, of which copy is hereto annexed. He however informs me in a private note as follows:—

"The duplicates only, as far as I recollect of the Bootan collection, were sent to the Court of Directors. A complete series was kept with the Society, particularly of the insects; the rest I forwarded myself through the Government on the part of the Bootan deputation."

There is some discrepancy here, which I cannot reconcile with Capt. Pemberton's letter quoted above; but as my knowledge stops at this point, I must leave it for your consideration.

Of the insects, there are none in the Society's collection noted as from the Bootan deputation. The assistants state, that they have no recollection of any collection having been received at the Museum for the Society as from Capt. Pemberton, or from the Bootan deputation; nor can I find any in their book, which however, is not very carefully kept. The insects referred to by Dr. McClelland, may possibly be those which have no donor's names annexed to them in our cases. On my assuming charge of the Museum, I found a tin box of insects in the taxidermists' room, of which they were taking great care, and their account of it was, that Capt. Pemberton had brought *two* such boxes to the Museum; one of which they packed, and *he* himself sent it away, for the Court

of Directors; leaving the other under their care as his private property. This box has recently (February) been sent, under your directions, to Mrs. PEMBERTON.

My report of February also mentions, that in that month I had received from Col. MACLEOD two boxes, being Geological Specimens collected by Capt. PEMBERTON on his Bootan Mission; but without any catalogue. On these you will doubtless take the orders of Government. Dr. McCLELLAND in his note mentions the collections of the Assam Deputation. On reference to Dr. WALLICH, he informs me that he has reported on this subject to Government.

My report of February last also states, what had been found to be the sad condition of the three cases forwarded from Umballa by Mr. CLARK, and just received at the Museum, where I had recognised the collection as being that made by Sir ALEXANDER BURNES during his mission to Scinde. You will doubtless take the orders of Government on this collection also. The Society is thus, I trust completely acquitted of any negligence or detention of any collection which has come into its hands of late years.

III.—The assistance which may be afforded by the Society to facilitate the early despatch of collections made by Government Officers.

It appears from the foregoing statements, that the Society, in the case of Dr. HELFER's and Capt. PEMBERTON's collections have, really in every respect forestalled the wishes of the Honourable Court, by assisting as far as possible in the early dispatch of them. It is unnecessary here to refer again to its resolution, as already quoted at par. 2, when speaking of the relations in which it stands towards the Honourable the Court.

IV.—The assistance which may be afforded by the Society towards the completion of the Court's Museum.

In reference to this matter, the Society has also done itself the honour to forestall in some respect the views of the Right Honourable the Governor General in Council, by its resolution and by our first dispatch of duplicates of birds and snakes, and of Lieut. HUTTON's valuable Geological series from the Himalaya and Spiti Valley. If desired, it might employ a few taxidermists at the expence of Government, who could be sent at a small expence with gentlemen desirous of contributing to the knowledge of Indian Natural History, and under zealous amateurs, many of whom are now deterred by their want of knowledge, or want of time, or the expence, much might doubtless be done.

I may be excused in remarking in conclusion that it is clear that, in relation to the Natural Sciences, as in every thing else, if India had all that she requires from Europe, and Europe all that she wants from India, both must be immeasurably benefitted. In nothing then, surely, can a scientific body like the Asiatic Society, be more honourably employed than in promoting even the smallest fraction of such an exchange; and in nothing could it, in its sphere, more effectually confer lasting benefit on India.

I have the honour to be,
Sir,
Your's obediently,
H. PIDDINGTON,
Acting Curator, As. Soc. Museum.

CALCUTTA,
Asiatic Society's Rooms,
18*th March*, 1841.

Copy of a Letter to Dr. McClelland *referred to in the foregoing Report.*

Dear Sir,

A dispatch having been received by the Government of India from the Honourable the Court of Directors, in which, referring to Proceedings of the Asiatic Society for February, September, October, and November, 1838, they state, that it would appear that collections of Natural History have been detained at the Society's Rooms since those epochs, I have been desired to furnish a report thereon.

2. They refer more particularly to Dr. Helfer's and Captain Pemberton's collections. Of the first of these, (Dr. Helfer's,) I have been able to render a full account, quite exonerating the Society or its officers from any blame.

3. Of the second: we have in the Proceedings reference to three collections, mostly birds, *deposited* by Capt. Pemberton, and at p. 749, (Journal 1838,) that 145 birds were *presented* by him "under instructions from Government." It appears, moreover, by the books, that on the 29th February 1840, four cases which the Messrs. Bouchez state to have been packed and marked here for the Honourable the Court, were sent to the Marine Board for shipment, but they have no receipt for them.

4. I am therefore desired to request from you, on the part of the Society, the best information you can afford us as to these, or any other Government collections of Natural History, which may have been received or sent out while you were in charge of the Society's Museum; with any documents or receipts which may enable us to explain to the full satisfaction of Government, what has become of them.

I am Sir, &c.

Calcutta,
As. Socy. Rooms, 12th March, 1841.

H. Piddington,
Actg. Curator, As. Socy. Museum.

No. 806. To Dr. J. McClelland,

Curator, Asiatic Society's Museum.

Sir,

With reference to your letter dated 29th ultimo, I am directed by the Marine Board to inform you of the shipment on the *Shepherdess*, Capt. Biggar, of the 4 boxes containing Natural Curiosities for England, to the address of the Honourable the Court of Directors, at the rate of £ 5-5 per ton of 50 cubic feet; freight payable in England on due delivery of the boxes.

I have the honor to be,
Sir,
Your most obedient Servant,
C. B. Greenlaw,
Secretary.

Fort William,
Marine Board Office,
The 5th March, 1840.

Resolved—That Mr. Piddington's report be forwarded to the Government, and that attention be particularly directed to the three points suggested in paragraphs 10, 11, and 13, by the Officiating Curator for the consideration of Government, and more particularly for the employment of taxidermists at its expence to accompany gentlemen desirous of contributing to the knowledge of Indian Natural History, but now deterred from doing so, for want of knowledge, or want of time, or the expence.

Read the following letter of 24th March last from Mr. Secretary Bushby :—

No. 433. 'To H. Torrens, Esq.

'*Secretary to the Asiatic Society.*

'*General Department.*

'Sir,

'I am directed to acknowledge the receipt of your letter and its enclosure of the 8th instant, and to acquaint you for the information of the Asiatic Society, that the Report of the Officiating Curator of the Society's Museum on the Specimens brought out by Capt. Tremenheere, and deposited with the Society for the basis of a Museum of Economic Geology, will be transmitted to the Hon'ble the Court of Directors by the next Overland Mail.

'2d. I am desired to take this opportunity for forwarding to the Asiatic Society the accompanying three specimens of rock from the head of the Pass at the Gurrah Ghât, near Mhow, on the Bombay and Agra road, together with a copy of the letter from Captain J. H. Smyth, Officiating Superintendent of the Road, transmitting the specimens to the Military Board.

'3d. In respect to the Society's Museum of Economic Geology, the contributions will be obtained gradually by such aids as the Hon'ble the Court of Directors may be enabled to procure, or be pleased to sanction, and by the assistance of private individuals interested in this department of practical science, and by donation or interchanges with other Societies.

'4th. The influence and correspondence of the Asiatic Society will progressively accomplish these objects.

'5th. The Military Board will be instructed to direct the attention of the executive Officers of public works and roads, to the purposes of the institution of a Museum of Economic Geology, and to cause collections to be made of specimens, and descriptive lists to be sent to them, from which in communication with the Curator of the Society, the valuable and useful parts will be selected for transmission to the Museum at the least possible expence, and in most cases it is hoped, by a proper arrangement, without any charge in excess of the ordinary carriage that would be employed for other public uses.

'Fort William,
'24*th March*, 1841.

'I have the honor to be,
'Sir,
'Your most obedient Servant,
'G. A. Bushby,
'*Secretary to the Government of Bengal.*

'No. 143. 'To Major De Bude,

'*Secretary to the Military Board, Fort William.*

'Sir,

'You will receive by Dak banghy, three specimens of the soil at the head of the Pass at Ghurra Ghat, forwarded to me by Captain Kellner, superintending the road from

Dewass to Ackberpore. No. 1 abounds in detached masses eight feet below the surface; No. 2 in blocks four to six feet in diameter at the surface, and bedded two to three feet in No. 3, which latter is the prevailing stone at the pass, as far as the excavation has as yet been carried.

'I have &c.

(Signed) 'J. W. Smyth, *Captain,*
Offig. Supt. of the Agra and Bombay Road.

'Seepree
'16*th February*, 1841.

(True Copy,)

(Signed) 'M. Macleod, *Captain,*
'*Assist. Offg. Secy. Military Board.*

(True Copy.)

(Signed) 'G. A. Bushby,
'*Secretary to the Government of Bengal.*'

With reference to the three specimens of rock received with the foregoing letter, read the following report from the Officiating Curator of 5th April, 1841, a copy of which was communicated to the Government through Mr. Secretary Bushby :—

'H. W. Torrens, Esq.

'*Secretary, Asiatic Society.*

'Sir,

'I have to acknowledge receipt of the three specimens of Stone forwarded by Capt. Kellner, through the Military Board, from the Pass at Ghurra Ghaut, and to say that they are

'* No. 1. Hornblende Slate (or Basaltic Hornblende.)

'No. 2. Argillaceous Sandstone, with veins of mica, having a metallic appearance.

'No. 3. Felspar Prophyry.

'I beg to suggest, that if a good series of specimens through the whole line of road, with a plan and elevation, and as many barometrical elevations of the heights of passes, &c. as possible, could be procured, it would be a great addition to our geological knowledge; as we have but very few sections crossing from the NNE. to the SSW. from the valley of the Ganges towards that of the Nurbudda.

'I further suggest, that a copy of Capt. Tremenheere's Memoir be sent to Capt. Kellner, and indeed to all officers in charge of road-making duties. The specimens are for the present placed in the Museum of Economic Geology.

'Museum,
'*5th April*, 1841.

'I am, Sir,
'Your obedient servant,
'H. Piddington,
'*Offg. Curator, As. Soc. Museum.*

With reference to the 3rd paragraph of Mr. Bushby's letter, a question having been suggested as to the proprietorship of the Museum of Economic Geology, the Meeting were of opinion, that as it was not likely that the Government would ever recall it, that the Asiatic Society be considered virtually the proprietor.

* Specimen too small to determine to which variety belonging.

Read the following letter, No. 822, from Mr. Secretary Maddock : —

To H. Torrens, Esq.

No. 822. *Secretary to the Asiatic Society.*

Political Department.

Sir,

I am directed by the Governor General in Council to forward to you the accompanying copy of a calculation by Lieut. Bigge, of the heights of the principal villages visited by him in the Naga Hills, for such notice as the Society may deem it to merit.

I have the honor to be,
Sir,
Your most obedient servant,
T. H. Maddock,
Secy. to the Govt. of India.

Fort William,
29*th March*, 1841.

No. 11. To Captain Jenkins,
Agent to the Gov. Gen. N. E. Frontier.

Sir,

Having by the Dâk of yesterday received the Tables necessary to enable me to calculate the approximate height of the various points, which have been taken by Thermometrical observations, I have the honor to forward the same, and am happy to find that they prove nearly correct, when compared with those of yourself and Captain Pemberton.

1st. Observation, camp Semoor river below the Prephamab, 2nd February, 1841.
Thermo. in the shade, ... 48°.
Water boils, ... 208, approx. height 2,116 feet.

2nd February.
2nd. Observ. at wells on S. E. of village of Prephamah.
Thermo. in shade,..... 56°.
Water boils, ... 206, approx. height 3,235 feet.

2nd February.
3rd. Observ. at village of Geroophamah.
Thermo. in shade,..... 56½°.
Water boils, ... 204, approx. height 4,340 feet.

3rd February.
1st. Observation at village of Sassamah.
Thermo. in shade,..... 59°.
Water boils, ... 204, approx. height 4,362 feet.

4th February, 1841.

1st. Observation camp opposite Ronomah in valley.

Thermo. in shade,..... 48½°.

Water boils, ... 205, approx. height 3,729 feet.

5th February, 1841.

1st. Observation top of the pass to the Jolah river.

Thermo. in shade below the pass on W. side,..... } 46½°.

Ditto, Ditto, at top, ... 58½°.

Water boils, ... 201, approx. height 5,959 feet.

5th February.

2nd. Observation camp on Jalla river.

Thermo. in shade,..... 46°.

Water boils, ... 203, approx. height 4,729 feet.

6th February.

1st. Observation at pass of Ronomah or Paplongurge.

Thermo. in shade, ... 56°.

Water boils, ... 201½, approx. height 5,733 feet.

2nd. Observation camp below village.

Thermo. in shade,..... 50°.

Water boils, ... 204, approx. height 4,283 feet.

7th February.

1st. Observation summit of pass over great range.

Thermo. in shade,..... 47½°.

Water boils, ... 201½, approx. height 5,615 feet.

2nd. Observation camp below the pass, N. side.

Thermo. in shade,..... 56o.

Water boils, ... 205½, approx. height 3,513 feet.

3rd. Observation village of Jyramah.

Thermo. in shade,..... 68½°.

Water boils, ... 209, approx. height 1,650 feet.

8th February.

1st. Observation below cane bridge over Kooki river.

Thermo. in shade,..... 58½°.

Water boils, ... 211, approx. height 536 feet.

2nd. Observation summit of Sumigooding.

Thermo. at bottom in shade, 58½°.

Ditto to top, .. ditto, ... 70½°.

Water boils, ... 207½, approx. height 1,911 feet.

From the last observation it will be seen, as I have not the report of Captain Pemberton at hand to refer to the others from, that by my calculations the top of

the village of Sumigooding, stated by that officer from Barometrical observation, to be 196 feet above the level of the sea, is made 49 feet less, a very trifling difference, and one on that account highly satisfactory to me, for the correctness of the others as well as of the instrument, and I hope the same may prove equally so to yourself and Government.

I have, &c. &c.

CAMP SUMEEGOODING,
13*th February*, 1841.

(Signed) T. BIGGE,
Asst. Agent Gov. Gen.

(True copy,)
(Signed) F. JENKINS,
Gov. Gen. Agent.

(True copy)
(Signed) T. H. MADDOCK,
Secy. to Govt. of India.

The Secretary submitted to the inspection of the Meeting several drawings of fishes of the Indus, of the late Dr. LORD's collection.

The Secretary submitted a Sinde Vocabulary by Lieut. EASTWICK. Ordered to be referred to the Committee of Papers.

Dr. H. H. SPRY submitted in the name and on behalf of Capt. JENKINS, Commissioner in Assam, a series of Geological and Mineralogical specimens illustrative of the Grognostic features of the county of Cornwall, with the following note to the Secretary :—

" This collection, extensive as it is, is only a part of what Capt. JENKINS designs for the Museum; and it has occurred to him, as well as to myself, that the contribution now made will not be an unacceptable accession to the Museum of Economic Geology, so lately formed through the exertions of Capt. TREMENHEERE."

Read a letter from Lieut. A. CUNNINGHAM, of Engineers, of 25th March 1841, offering for purchase to add to the cabinet of coins of the Asiatic Society of Bengal sixty-five Roman coins and fifteen Greek coins, sent from the Mediterranean, for Rupees 50.

Lieut. CUNNINGHAM writes, " amongst the Greek coins are two of Melite, the other being Carthaginian and Greek-Egyptian coins of the Ptolemies. The Roman coins, are of all ages; several of them being coins of princes of whom the Society's cabinet possesses no specimens, such as Decentius, Lucilla, Faustina, Constantine, with the wolf suckling Romulus and Remus, &c. &c." Lieut. CUNNINGHAM also offered a series of the Kashmeer coins, twelve coins of twelve Rajahs for 12 rupees, and to collect some few other series of coins which would be interesting and useful.

It was resolved to purchase the coins from Lieut. CUNNINGHAM, and to avail of his services for the collection of other series, the thanks of the Society at the same time being voted to that Officer.

Read a letter from Capt. A. Troyer of Paris, of 15th October 1840, from which the following are extracts :—

" Whatever the future result of operations in Syria may be, they have prevented the Asiatic Society of Paris to dispatch to Calcutta a box full of Books, among which is the Sanscrit text, and my French translation of the first 6 books of the Rajatarangini.

" We have not yet received the number of your Journal which contains the account of the most interesting discovery you have made on a gem from the Frontier of Seistan, at the ancient Boonaka. It tends greatly to prove the great antiquity of Buddhism, which antiquity seems to gain from day to day.

" I am now about to complete the English translation of the whole Dabistan, which the late Capt. Shee had begun, but left unfinished. I intend to have the work printed in Paris for the Translation Fund Committee of London, and hope to have the pleasure of sending you a copy in about a year.

Read Dr. Spry's note on his tour to the Eastward.

Read letter from Capt. R. Shortreede of 22nd March 1841, with a perpetual Time Table constructed by him, by " the help of which," says the author, " may be found in less than half a minute the week, or day of any date for thousands of years, past or future."

Read a letter from Lieut. Postans, dated 21st March 1841 ; containing his report on a certain branch of the Trade of Shikarpore.

Read a letter from Capt. Hart of 15th March 1841, containing an account by him of the Brahooees.

It was communicated to the meeting by the Secretary, that the foregoing four papers would be published in early numbers of the Journal by him.

Read a letter from Mr. Kinney of Bonn, who has been selected by Professor Lassen to act as Agent for the Society, containing among other matter, the offer of his services in the disposal of the Society's Oriental Publications.

Dr. Hœberlin was of opinion, that before dispatching the books for sale to Bonn their prices should be reduced, as without such reduction, he was of opinion that it would be useless to send the works, as the Oriental Scholars of Germany would not purchase at prices which he considered to be exorbitant. On this proposal Dr. Hœberlin was requested to submit a list of the Publications he would suggest to be sent to Bonn for sale, with a scale of reduction in their prices he would recommend, for the consideration of the Committee of Papers.

On the motion also of Dr. Hœberlin, in consequence of the death of Professor Frank, who was an Honorary Member of the Asiatic Society of Bengal, that that compliment be paid to Professor Ewald, of Hanover, one of the best Orientalists in Germany. It was resolved—That the Doctor submit, formally, a proposition to this effect, likewise for the consideration of the Committee of Papers.

The Secretary submitted a Doguerotype, presented by Dr. Routh, for which, as well as for all other presentations and contributions in Books, Natural subjects, &c. the thanks of the Society were accorded.

On the Mines and Mineral Resources of Northern Afghanistan. By Capt. DRUMMOND, *3rd Light Cavalry, communicated from the Political Department, Government of India.*

[Copper Mining district in the Ghilzie territory, South East of Cabool.]

From the valley of Dobundee, which communicates with the plain of Lagur in the direction of Koorrum, to the district of Moosge, about 14 miles south east of Cabool, and again from Moosge to Derbund and Rojan in the direction of Fezeen, is an elevated and rugged mountain tract highly metalliferous.

Geology of the District.—The formations of this mineral district are composed principally of Hornblende rock, and Hornblende Gneiss, Primary Limestone, and Mica Slate. The hornblende rocks are generally speaking of a fissile character, the limestones again are hard, compact, occasionally slaty, and from their feeble effervescence when tried with nitric acid, seem to contain a portion of magnesia, and may accordingly be referred to the dolomite species. The strike or direction of the strata, as may be oberved from the sequel, is nearly N. East and S. West, dipping at a considerable inclination to the N. West.

Conforming with the hornblende rocks of Dobundee is a calcareous sandstone formation with subordinate beds of slate clay enclosing their seams of coal. This sandstone is soft and friable, and must be distinguished again from another sandstone also calcareous, and of a still softer character. The latter formation is of very recent origin, and has taken place subsequent to the upheavement of the primary and metalliferous rocks, as may be well observed in the vicinity of Koh i Aeenuk, where it occurs in the form of sand-hill—the sandstone strata are horizontal, the primary again are all highly inclined, and sometimes even vertical.

What the upheaving rocks may be I am yet ignorant, but believe they will be found to be granitic, and if so, they must be of a much more modern geological era than similar rocks in England, from the position of the sandstone of Dobundee, which is evidently a tertiary deposit containing lignite coal. A section from the passes in the mountains of the Hindoo Kosh to the Indus would be extremely interesting in a scientific point of view, and convey no doubt an accurate idea of the structure of the country, but this however would form a separate branch of inquiry of itself, and is not of immediate importance to the present research, which has reference only to mining and metallurgy.

When I lately had occasion to bring the mineral resources of the Himalaya mountains before practical men and capitalists in London, the voluminous Geological Report of the able and intelligent officer, the late Captain Herbert, was never read by them. All that they cared about was that portion of it which related to the metalliferous minerals and means of working them; and what chiefly attracted their attention was, his account of the seven localities where copper was produced in the Provinces of Gurhwal and Kumaon.

In an economical point of view, therefore, t e first thing to attend to in a district where metals are known to exist, is its probable productiveness ; and for this purpose a very close and minnte examination of every rock, ravine, and valley is necessary to discover if metallic veins, or indications of veins abound. I have found these appearances in all the following localities :—

Views and indications of Copper, old Excavations, &c.—At Moosye in the pass of Shadkhanee in the limestone range, on the right bank of the Sagur river, and to the west of the village of Kuttasung, I found purple copper ore in very small quantity cropping out to the surface.

In the pass of Silawat to the east of Kuttasung, I found copper pyrites in greater quantity cropping out there. On the crest of the same pass, or rather a short distance from it to the eastward, indications of the metal appear in that quarter also, and seem to point either to grey copper, or to the vitreous sulphuret. The strike of the strata is about N. E. by E., and S. W. by W., dipping at an angle of 65° to the N. W. by N. Beyond this also, and still further to the Eastward, specimens containing purple copper ore in small quantity have been brought me lately from Kohi Chaghgye.

Again near the base of the same range, and within a short distance of the village of Kuttasung, are three old excavations, blocked up with stones and rubbish. Two of these I have been attempting to

clear out lately with the intention of reporting on them hereafter. The ore is the purple variety, and I also found indications of the vitreous strike of the strata N. N. E. and S. S. W. dip 65° W. N. W.

On entering the Pass of Silawat, there is a ravine to the Westward, where a spring with a few trees may be discerned. About a couple of hundred yards above this spring is another old excavation, blocked up like the former, the declivity of the mountain is here very great; strike of the strata N. E. and S. W. dipping about 62° to the N. W. are copper pyrites, in a hard quartzose matrix, wall of the vein soft and slaty, and covered with the blue and green stains of copper. Here the limestoue assumes a slaty structure and then verges into a micaceous rock, from which I conjecture that the ore at a greater depth will make (as the term in Cornwall is) to mica slate. The decayed and withered splinters of this slaty limestone, at first sight have much the appearance of clay slate—East of this again I found another excavation in a micaceous rock, evidently a continuation of the last mentioned, the direction of the strata the same, and dipping in the same quarter at a high angle, ore copper pyrites. In the same line I have traced this deposit to another locality a short distance off.

On the Eastern, or left hand side of the road going up the Silawat Pass, is another old excavation blocked up like the rest. Strike of the strata W. S. W. and dipping about 65° N. N. W.

I saw stains of copper here, but observed no further trace of the metal at the time I visited the spot; a specimen of vitreous ore has however been brought to me since, which is reported to be from that quarter. Higher up the hill, and on the same side of the road, is another excavation, where I found indications of vitreous ore. Strike of the strata about N. E. by E. and S. W. by W. dipping about 65° to the N. W. by N.

About a quarter of a mile to the Eastward of the last mentioned, there is a singular deposit. A vein or bed of iron ore, upwards of 30 feet in breadth, containing another vein of a mixture of iron and grey copper in a space about two feet wide. This mixture of copper and iron has been worked to the extent of a few feet, but the difficulty of separating the copper from so large a proportion of iron, was no doubt too difficult an operation for the ancient miners to be attended with profit, and must have been abandoned accordingly. Strike of the strata here N. E. and S. W. dip 75° N. W. From the direction of the strata, and the external character of this iron ore, it must I think be connected underneath with a great bed of iron ore nearly 40 feet in width, which I discovered in the Silawat Pass. The ore is massive, and is of a steel grey colour; sometimes it gives a blackish streak, and then it affects the magnet considerably, showing the presence of the protoxide. The great mass however gives a red streak, and below the surface will no doubt be found a well-defined bed of specular iron ore.

To the west of the crest of the Silawat Pass, and near the summit of the range, which I suppose must be about 1200 feet above the level of the plain of Moosye, are some extensive excavations. The general strike of the stratification here is about N. N. E. and S. S. W.—in some places it is nearly perpendicular, or dipping at a great angle to the W. N. W.; one of these excavations at first appeared to me like an open working, having the form of a perpendicular chasm in the mountain, the depth of which I measured upwards of 40 feet, and varying from $3\frac{1}{2}$ to $8\frac{1}{2}$ feet wide, at the deepest part the measurement was 7 feet and three quarters.

From further observation, however, I am inclined to suspect that this excavation, but especially others of a far deeper and more extensive character at Koh i Aeenuk and Seestungee, occupied originally the spaces of galleries, or levels, and that these have fallen in since, either from having been shaken by an earthquake, as the wreck and ruin presented by some of them would seem to indicate, or what appears probable, the action of water from the melting of snow at the surface, percolating by the walls or sides of the veins, has in process of time gradually loosened that portion of the ground which was left as a protection for the levels, and these levels having been driven along veins that preserve their course with the direction of the strata, which are nearly perpendicular, will account for the chasm-like appearance they now exhibit.

The system of mining which has been pursued here, differs materially from our improved modern methods. Instead of taking up a more convenient position for commencing operations lower down the brow of the mountain, and driving a gallery for a considerable distance, perhaps through barren ground, so as to reach the vein at a proper depth, and which opening is made at the same time to act as a drain, the plan adopted by the ancient miners seems to have been the making of a small entrance, about 3 feet wide, and 4 feet high upon the vein itself, and having gone down upon it at once in a sloping direction, until a certain depth was attained, they pursued a horizontal course, and stripped the roof of ore in their progress. This inattention to drainage has answered so long as the ore could be followed without the occurrence of water, but I suspect even then in some places, they must have felt inconvenience from the water caused by the melting of the snow in spring. I do not believe from the appearance of the galleries which are still remaining, that timber was much used, if employed at all for supporting them. The structure of the rocks in most places being of a compact character, and the great dryness that prevailed, may have enabled the miners to work to a considerable extent without that aid. In excavating the ore and opening ground, these people seem to have used a sharp-pointed well-tempered instrument, as may be observed by the marks of their work on the walls of the galleries, particularly at the mine of Seestungee.

As the most important point to ascertain is the appearance of the deposits of ore at a considerable depth, the width of the veins, &c. I have been particularly desirous of penetrating so far under ground as to arrive at the different spots where the ancient miners left off working. In some instances I got so far, that I believed I should soon accomplish that object, but I have invariably had my progress arrested by large masses of rock, stones, and rubbish which have fallen in. A native of Moosye lately brought me intelligence of some deep excavations which have been discovered on the eastern side of the Silawat Pass. Upon asking him why he had not taken a light to examine the interior, and see if they were more perfect than those I had already discovered, he gave me to understand, that like the rest of his countrymen, he had superstitious misgivings in regard to the exploring of those old and abandoned excavations, and was further deterred by observing the skin of a snake at the entrance of one of the galleries. The dread of meeting reptiles of this kind in these deserted mines, is one of the reasons why the people are so ignorant about them. The same individual told me, that often as he had hunted over those mountains from his earliest youth, he had not the least idea that the excavations were so numerous, only a few had been observed, or were known to the neighbourhood until I commenced my researches.

On crossing from the Moosye range to the mountains of Baghgye, I obtained some rich specimens of vitreous and purple copper ore in different places, and also copper pyrites, but did not observe any regular vein, except one of copper pyrites in hornblende gneiss, which is about 10 inches wide; this is very poor at the surface, but may however at some depth turn out rich. At Kotil i Dushtuk, I picked up a good number of stones containing copper pyrites in a hornblende gneiss formation, running N. E. and S. W. and dipping about 55° N. W.

This rock is very dark in some places from the prevalence of the hornblende, in others it has a yellow weathered appearance, and so much disintegrated, that I had not an opportunity of examining the locality well; there are quantities of rock, green-stained from copper. In one place where it was more compact, I obtained specimens from some strings or small veins of copper pyrites, in a quartz matrix, evidently connected with a larger vein, and from the abundant indications at the surface, I suspect that a considerable deposit must exist underneath. From Dundhanee in the direction of Jowhar to the south of Rotil i Dushtuk, specimens of green-stained rock have been brought me lately, and said to be in still greater abundance.

To the south of the Baghgye range is the great mine of Koh i Aeenuk, which I have already mentioned, all in a state of ruin and dilapidation. Purple copper ore crops out to the surface; and the excavations, as well as a quantity of slag and vestiges of ancient houses that remain, show what a productive mine this must have been in former days. The dreary and desolate aspect of the spot, with a solitary hut and a few squalid inmates, afford a melancholy contrast to the throng of industry which must have been witnessed here in better and more prosperous times. About a mile West of

Aeenuk is the mine of Seestungee, which I have also mentioned, and which is in a similar condition with the former. In this mine there is a chamber, one side of which is covered with sulphate of copper; the chamber is about 18 feet in length, 12 in breadth, and 10 in height,—and the end of it is blocked up with stones and rubbish. Some of the excavations here are so large, that they have more the appearance of caverns than mining galleries. A short distance from this, on the road to Koh i Aeenuk, I observed near the summit of a limestone rock several veins of spar carrying copper ore, principally copper pyrites; one of these is about 11 inches wide; between this again and Aeenuk, there is another spot where the green-stained indications of copper appear abundantly, showing, that the metal exists there likewise.

East of Aeenuk, in the mountains of Acoorookhail, I found a vein of solid copper pyrites about an inch thick in hornblende gneiss; at Essurtungee on each side of the torrent, I observed copper ore in many places, though I was not fortunate enough in finding a regular vein, whole cliffs of the rocks however are covered with the indications of copper. The richest specimens of red oxide of copper and native copper in my possession, were brought to me by a native, and said to be from the hills of Goorgee Mydan, not far from Acoorookhail. Of the locality, however, from whence they were procured I am doubtful, as the native alluded to was indebted to another for the specimens. I opened the ground in one place to the extent of several feet, and though a few indications of the metal appeared, many circumstances rendered it evident, that they had not been procured from that exact spot, and that a further search was necessary.

At Derbund, in Tungee Khooshk, in a gneiss and mica slate formation, I observed abundant green stains of copper. At Kila Ataye, there are several veins of quartzose spar carrying purple ore, one of which I measured about a foot in breadth, the rock is mica slate, and contiguous to limestone. In Cornwall the richest deposits I was told generally occur at the junction of the clay slate with the granite; and in this mineral tract, I believe the most productive will be found at the point of contact of the limestones with other rocks.

At Tezeen, I discovered small veins or strings of rich ore ramifying in different directions, and forming a kind of net-work in a limestone rock. I saw no decided course of ore of any bulk, but what there is of it, is very rich, being composed of the vitreous and red oxide varieties, and native copper. The chief of Tezeen, I am told, found a mass of the latter close by his house on one occasion, and so large, that a copper vessel was manufactured from it. This must have been brought down by the mountain stream, and most probably from the quarter I have mentioned.

In a ravine at Khoondurra, between Seestungee and Dobundee, I obtained some specimens of copper ore in small quantity, but did not discover any vein, though a closer search may yet suceeed from the indications of the metal in that quarter.

At Dobundee, on entering the valley, I found at Shinkye, on the right bank of the rivulet, specimens of red oxide and grey copper, but discovered no regular vein at the time. In a ravine named Lahazour, about half a mile from Shinkye, I observed in a hornblende formation an outcrop of grey, vitreous, and red oxide of copper accompanying a vein of spar principally calcareous. Beyond this in another ravine named Zerazour, there is a thin vein of rich copper ore similar to the preceding—formation still hornblende; the strike of the stratification in this direction, is nearly N. E. and S. W. dipping about 65° to the N. W.

In the ravine of Chinarkhail, I found a vein* of copper pyrites cropping out in small quantity, and higher up at Chenar, less than a quarter of a mile from thence, I found a vein of grey copper, about 7 inches wide, with a considerable proportion of iron; this vein bends a good deal in consequence of the twisting of the strata, the general direction of which is about N. E. and S. W. dipping upwards of 60° to the N. W. The formations here are all hornblende.

* When I use the term of *vein* it is to convey my meaning in more familiar language, at the same time the Cornish phrase *lode*, *which signifies* a course of ore, would, properly speaking, be more correct. All the lodes in this country are what would technically be termed beds of ore conforming with the strata, and not veins, which are rents or fissures traversing the strata, and filled up with mineral substances.

In the ravine of Jerobaee there is a ferruginous looking vein, containing vitreous ore, and also grey copper, the latter has a large proportion of iron, and is found about 5 or 6 yards apart from the former. On the opposite side of the ravine I found indications of the metal also, and beyond this in the same line, I found similar indications in a small ravine adjoining, and believe these to be all one and the same deposit connected underneath. The strike of the strata here is N. E. and S. W., all highly inclined. About 300 yards to the N. W. of these localities is another out-crop of copper ore, with a good deal of the same ferruginous appearance; this seems to bend towards the others, running nearly East and West, but is a distinct deposit in my opinion, and unconnected with them; these veins are all found in hornblende.

During my survey of Dobundee, I observed several rolled masses of a dark coloured iron ore brought down by the river. This ore yielded a blackish streak, and affected the magnet, but did not attract iron filings. What I observed was evidently derived from the surface of a bed of iron ore. In the Chenar ravine, about a couple of hundred yards from the vein of grey copper, which I have described, I obtained a few fragments of magnetic iron ore which powerfully attracted the filings, but saw no trace of a regular deposit in that quarter. These facts, however, render it not improbable that a bed of magnetic iron ore may exist in the neighbourhood; having not yet completed my examination of that part of the district, I regret I cannot speak decidedly on this subject.

Extent of the District, &c.—With regard to the extent of this mineral tract, Tezeen is the furthest point to the Eastward, where I have found copper ore, and specimens of copper pyrites have been brought me from Wurduk to the Westward. Specimens of purple ore have been sent me from Spega to the South, and I have traced the metal as far North as the hills about Cabool.

The most promising veins I have discovered are those of Derbund and Dobundee,—of the old mines, Koh i Aeenuk holds out the best prospects. I have reason to believe that more veins equally, if not more favorable, may yet be found, when every rock is sufficiently investigated. A perfect examination of this kind, is of great importance, for the two-fold object of showing the external signs of the productiveness of the strata, and guiding the miner at once to the most desirable points for experimental operations. From the number of natives I have been employing to search for me throughout the district, and who well understand now what is wanted, I feel confident that if this plan were continued for a short time longer, not a spot would remain unexplored. Specimens have been lately brought me from new veins in Derbund, as well as from Rojan, and Sungdurra on the southern side of Koh i Kubeer, the most elevated of the mountains in that quarter of the country.

In my former Report, I mentioned that I had discovered the richer varieties of copper ore, namely the purple and vitreous sulphurets, the former containing 60 per cent of metal, and the latter about 80—I have now the satisfaction of adding to these the red oxide containing 90 per cent, and native copper. As far as the character of the ore is concerned then, it is of the first quality. Of course what I allude to is the pure mineral unadulterated by the matrix. What the ore in mass will produce should the mines be opened, can only be determined when that takes place; but it will I think, yield about the same as the Chilian, namely, between 20 and 30 per cent. The average of the ore of Cornwall is between 8 and 9 per cent, and, as I stated in the Report alluded to, it is this difference in the quality of the ore, that enables the Copiapo Mining Company to dispose of their ore in England at a profit, notwithstanding the vast distance of transport. The ore is brought down on the backs of mules from the heights of the Cordilleras to the seaport for £3 per ton, shipped from thence to Swansea in Wales for £5 per ton, when it is finally smelted, and the produce exported abundantly (no doubt to India) as English copper.

Mineral Prospects of the District.—In respect to the capabilities of this mineral district no one can take upon himself to form an estimate of what is underneath the surface, until practical trials are made, but, if we base our calculations on the most reasonable probabilities, there is every expectation that these trials will prove eminently successful.

By the foregoing details it is apparent, in the first place, from the number of veins and indications of them which have been discovered, that the whole of the strata are highly metalliferous.

Secondly, the quality of the ore is excelleut, and the richest varieties are to be found.

Thirdly, it is evident, from the extent of the excavations of Koh i Aecnuk, Seestungee, and Moosye, as well as the quantity of slag still remaining at the former place, that the people who worked these mines, must, in following the ore to a considerable depth, have found it increasing, or at any rate not diminishing in quantity.

Lastly, we may reasonably infer, that these people, by confining their operations to so few localities, found the work sufficiently plentiful and lucrative to give them employment, without being under the necessity of opening new ground, and this will account for so much being left untouched. The mines also must have been abandoned in consequence of some political convulsion or foreign invasion.

Facilities for working the Mines.

Means of Drainage.

Of the means of drainage, I may say, that in general there is no want of declivity of ground for obtaining adits—the term *adit* is a technical one in mining, used to denote a gallery or passage which acts at the same time as a drain. In an economical point of view, this is of great importance, as the system of working by a succession of galleries above the adit-level in some mines, or having to go but a short distance under it in others, is attended with much less outlay than when the reverse is the case, and mechanical power must be had recourse to, for raising the water from a considerable depth to the drain. In the Gwennap mines in Cornwall, for instance, where the deepest shaft is about 1700 feet below the surface, there are no less than seventeen steam engines, some of which are of enormous size, and these, with a water wheel 42 feet in diameter, are employed night and day in pumping the water, and raising ore and rubbish from the mines. In the Moosye ridge, the principal mines are situated about the summit of the mountain; at Koh i Aeenuk again, which is but a small hill in comparison, there appears to be abundance of room for bringing in an adit under all the old workings, but at Seestungee, this would not be managed so easily. The whole of this metalliferous tract, however, is so much more elevated and mountainous than the mineral ground of Cornwall, that the unwatering of the mines could be effected with greater facility, and at much less expence.

Falls of water for machinery, &c.

Small streams for washing, cleaning the ore, &c. are often wanting in these mountains, but this defect may be remedied wherever springs may be observable, by piercing the slopes with *karezes*, and obtaining the necessary quantity of water. At Derbund, there is a small stream which passes close by the veins of purple ore I have described. The river of Sogur pursues its course along the base of the range at Moosye, where the mines are situated; the rivulets of Dobundee, Tezeen, Chuckeree, &c. at all seasons of the year have a sufficient supply for moving machinery, whilst mountain torrents, such as those of Esourtungee and Jerobaee, possess I think sufficient water, considering the greatness of their fall, for turning stamping mills, and crushing apparatus of that description.

Supply of Timber.

The pine forests which stretch from the Sufued Koh to the Southward, will afford a permanent supply of wood for timbering the mines, and charcoal for the smelting furnaces. The same carriage which would convey the ore to the fuel, would bring back timber for the mines. The furnaces best adapted for this country, are not the reverberatory ones of Swansea, where coal is the fuel, but

the blast furnaces of Sweden, where charcoal is employed. It will be a matter for future consideration, whether the most desirable site for these would be in the direction of Spega and Hazardurukht, or of Tezeen. The former will have the advantage of being better situated for labourers, whilst the latter, by being near the Cabool river, will have the convenience of raft carriage to the Indus.

State of roads and means of transport.

Mining operations may be commenced in this country without incurring much expence in road-making at the outset. At present the roads are only tracks, but they answer camels, and the mountains afford pasture for the maintenance of these useful animals. Mules, ponies, &c. are also used for carriage, and the neighbouring district of Koorrum is famous for its breed of the former. Roads for wheeled carriage may in process of time be made, as improvement advances, and this will create a great saving in transport throughout the country generally. An excellent one might be cut from Cabool to Dobundee, by the plain of Sogur, and no doubt the same could be continued to the banks of the Indus by the valley of Koorrum; guns at any rate have already been taken by that route. As soon as this road is surveyed and repaired, and political obstacles are removed, the circuitous route by the Khyber Pass will be forsaken for this shorter and safer line of communication with Hindoostan; meanwhile as far as the mines are concerned, the most economical method would be to purchase a certain number of camels, the transport management could then be conducted at a moderate expence, and occasion very little trouble.

Habits and character of the people.

The occupations of these mountain tribes are partly agricultural, but chiefly pastoral and commercial. Those who have flocks of sheep migrate from place to place according to the season of the year, whilst those who have camels, engage in trading speculations, and in hiring out their camels for transporting wood, charcoal, &c. to Cabool, salt from Kalabagh and Malgeen, iron from Bajour and Foormool, and merchandise to and from Peshawur, and various other quarters.

I regret to add, there is another class that I call the predatory, which the poverty of the people, the distracted state of the country, insecurity of property, &c. appear to have brought into existence, and gangs of these banditti have been infesting the country to the no small detriment of the industrious merchant. The different tribes which contain this class within them, are the following:—

Adrumzyes	Rob by night.
Muminozyes	Ditto ditto.
Ahmedzyes of Spega	Highwaymen by day.
Kurrookhails	Ditto by day and night.
Khivazuks	Rob by night principally.
Ooreakhails	Ditto ditto.
Ootkhails.	Thieves by day principally.

These molest the country between Ghuznee and Jelallabad—some rob chiefly by night, break into houses, annoy an encampment, &c. others steal in broad daylight, in the bazar of Cabool even, and are famous for their dexterity in pilfering; whilst others again come down from the mountains in force, attack a cafila, and return immediately with the property they have captured.

It need not be supposed, however, that because a portion of the people have hitherto been leading this lawless life, that the hope of establishing useful works, even in the secret haunts of these robbers, is by any means impracticable. It must be remembered, likewise, that a revolution has taken place in the country, and that during the last year, the constant political excitement which was kept up, of itself produced much of this evil. Formidable as the state of affairs may seem, the difficulty of uprooting the evil is much more in appearance than in reality. There is indeed a regular system of robbery carried on, which must be systematically dealt with, to be effectually put down. This I believe may be accomplished without levelling a single fort, ravaging an acre of ground, or spilling one drop of blood. The Ghilzyes of that district, are about the finest race of people I have seen in Afghanistan, and the predatory portion, though wild, are far from being intractable. But they have been long living without the pale of the laws, in a country distracted and torn with feuds and dissensions, without any security of property; the strong ever oppressing the weak, and have in a great measure been brought by circumstances into this lawless mode of life. Give them, however, but constant employment, with good wages and regular payment; encourage a spirit of industry, both by precept and example; let strict justice be dealt out to them without respect of persons; and we shall shortly see their swords changed into ploughshares, industry take place of licentiousness, and these people be converted into peaceable and useful subjects. A firm, but just and liberal haud, in my opinion, might mould them into any thing.

During the late disturbances, it was often remarked to me, what a detestable race these Afghans were; that a man could not stir a few yards from his house or his tent, without the risk of assassination; and that three times the amount of military force was scarcely sufficient to keep this unruly country in order; and yet, I have gone with but a few followers into the midst of them, have wandered amongst the wildest and most desperate characters, often without a sword at my side or a pistol in my belt; and even during the very crisis alluded to, when I returned to Cabool, I did so entirely in opposition to my own views and inclination, and only in accordance with an express order to that effect.

Since I commenced this research, I have made a point of living with the people, and I am of opinion, that in any attempt to develop the resources of a country, an acquaintance with the character of the inhabitants is a matter of serious consideration. The result of my observations are these: that if we take advantage of the keen commercial spirit of this nation, and direct its energies into the many useful channels which may be opened to them; if the conciliatory policy be steadily persisted in, all gloomy suspicions as to our future intentions removed, and the Afghans become persuaded that we are really their friends;—there is no quarter of the east where British influence will more rapidly take root, and British power be more readily consolidated—whether the nature of the climate, the wide field for European improvement, or the freedom from prejudice on the part of the people be considered.

Rate of payment for labour, &c.

It is not easy to say exactly, what the rate of payment for labour would be in those mountains, when order is completely restored, and a new state of things brought about; but there can be no doubt of this, that it will be moderate.*

* Osman Khan, who is a considerable landed proprietor himself, and experienced, is of opinion that only one-third of the available land of Afghanistan is under cultivation.

Osman Khan informs me, that during Dost Mahomed's time, he used to hire able-bodied labourers for cutting canals, and reclaiming waste land at Balabagh, at the rate of two annas per day; but that now he hires them for about three annas. The rate which at present exists in Cabool is a forced one, the result of a combination of circumstances, which can only last for a limited period until things find their proper level.

The Jajee tribe, and other industrious mountaineers, are all robust and stout-looking people, and during the winter travel as far as Peshawur for employment, which they would not be induced to do if work were afforded them at home. There are few points in the country more favorably situated for a command of good workmen than the mining district under discussion.

As the price of labour, however, is directly affected by the price of food, it will be a matter of great importance for the successful working of the mines, that the arable land in their vicinity be properly attended to. If the mountains bear witness to an extent of industry unknown to their present ill-fated occupants, the state of agricultural affairs in the adjoining fertile plain of Mogur, bears equal evidence of a former state of great prosperity, and points, in a significant manner, to the withering effects of Afghan misrule. The remains of ancient canals and water courses, the quantity of available land now lying waste, or in a low state of cultivation, the wretched condition of the people, and their inability to procure the necessary means of cultivating the soil, all show how much might be done by the application of capital, as well to the labours of the field, as to the dormant mineral resources of the country.

In conclusion, the following facts I would submit, may be considered as fully established, viz.:

Decided indications of abundance of copper, and of the richest varieties of ore. Wood in abundance, for timbering the mines, and for charcoal.

Water as a moving power for impelling machinery, thus obviating the expence of steam, camels, mules, &c. for carriage.

A hardy and able-bodied population on the spot, anxious to be employed as workmen.

Here therefore are the means for the production of this metal, and apparently to any required extent. It now only remains, that the inquiries I have had the honour of commencing, should be followed up; arrangements made for the suppression of the prepatory system; the providing an adequate capital for working the mines on scientific principles; and adopting such measures as will facilitate the transit of metallic produce to water carriage on the one hand, and the different marts in the interior on the other.

Iron of Northern Afghanistan.

As no mining operations can be carried on without a command of well-fabricated iron, the state of the manufacture of this indispensable metal becomes a primary consideration, in any attempt to render the mineral resources of an uncivilized country available; and certainly if any thing be required to show the abject state of the arts in this quarter of the globe, the iron trade and manufacture may be quoted as an instance.

The iron of Bajour, which is produced from magnetic iron sand, is not only in use throughout the northern districts of Afghanistan; but from its superior quality, is

likewise in great demand in the Punjaub. It sells in Cashmeer, for three times the price of the common iron of that country, and it is used in Candahar for the fabrication of matchlocks.

Were an improvement in the manufacture to take place, iron might no doubt be obtained equal to the Swedish—the best description in Europe. It was my intention to visit the district of Bajour at this time; but having been prevented from accomplishing my object, I am dependent on what information I have picked up hastily from merchants and others, who have been in the habit of visiting it, for the purpose of purchasing iron. The supply of iron, however, which the mountains in that direction afford, must be perfectly inexhaustible, from the intelligence I have derived, as to the immense quantity of this iron sand, which is annually washed down from their deposits.*

A sample of the sand was brought to me sometime ago, and taken from the bed of the stream at once, without being sifted and prepared for smelting. On applying the magnet, the ore was immediately taken up, and the quartzose and other strong particles remained. I then placed a small quantity of iron filings in contact with the ore, and the mutual attraction of the filings with the crystals of ore, was easily recognized with the assistance of the magnifier. It is described as occurring in great abundance in the mountain streams of Deer, Belour, and Mydan, which fall into the river of Punjcora, that ultimately joins the Cabool river below Peshawur.

The methods of reduction in this country, appear to be the same with those employed in different parts of India; and the manufacture in the Himalaya mountains, already described by Capt. Herbert, is equally applicable to that of Bajour. It is evident, that whatever quantity of the ore is submitted for reduction, a small proportional part of the iron contained in the ore is brought to the state of useful iron. In the first process, a very crude mass of iron and scoria is produced; this crude mass is then submitted to the fire by a blacksmith, and after an incredible sacrifice of labour, a piece of malleable iron, fit for ordinary purposes, is at last produced, which, as may well be supposed, is any thing but the purest.

A more rude and inefficient system of smelting could not be devised, nor must it be understood from the simplicity of the management, that the processes are economical—they are the most expensive which could possibly be employed. It would be absurd to suppose that a refractory metal like iron, can ever be properly or economically fabricated by means of a great expenditure of manual labour, to the neglect of a mechanical power, such as a plentiful stream of water can afford, and which is to be obtained abundantly in the district that yields the sand I have described. So long as the miserable air bags, and a common blacksmith's sledge hammer are used for that purpose, iron inferior in quality, very deficient in quantity, and at an extravagant price, must be the necessary consequence.

But Afghan inexperience and mismanagement does not stop here. The crude iron is not converted into malleable on the spot, where charcoal abounds and labour is exceedingly cheap; but is transported slag and all, to Cabool, for instance, where both charcoal and labour are exceedingly dear. Again, in working up this

* Should there be a proportion of titanum combined with this ore, I imagine it will be trifling. When I submit a supplementary Report, with the chemical analysis of different ores, this will be explained. The colour of the iron sand is dark black.

crude iron into malleable, one-third is lost, so that the unfortunate purchaser has not only to pay for an expensive and ill-manufactured article in the first place, and for the difference in the price of labour and charcoal, pointed out in the second, but for the carriage of a large proportion of dross.*

The cost of the transport of a *khurwar* of iron, (13 Hindoostanee maunds,) in Dost Mahomed's time, was about Rs. 15 from the Punjcor ariver to Kooner, and from thence to Cabool Rs. 10, making in all Rs. 25. At present, the hire will I am told, be about Rs. 35; but for the sake of example, let Rs. 30 be looked upon as the expence of conveying a *khurwar* of iron from the Punjcora river to Cabool. A hundred *khurwars* of this iron are said to be about the quantity annually consumed in Cabool, in the time of Dost Mahomed; lately the demand has greatly increased. Taking this quantity only, however, as the estimate, we have at the rate of Rs. 30 per *khurwar*, an expence of Rs. 3000 for carriage; but to render the iron fit for use, one-third is lost, so that an expence of Rs. 1,000 is every year incurred in Cabool, for the conveyance of slag. The information I have been able to gather respecting the probable quantity annually produced in Bajour is so vague and contradictory, that I do not feel justified in carrying out this calculation farther. At a guess, I believe it must be about a thousand *khurwars;* but be this as it may, there is no doubt that the saving, effected by a well manufactured article in the mere transport alone, would in a short time cover the expence of erecting an iron work upon the Swedish principle.

As a set-off to the practical difficulties inseparable from establishing works of this kind in a new and uncivilized country, the advantages which the manufacture of Bajour would possess over that of Sweden, would be these:—

First. The difference in the price of labour, the wages of a workman being about 2 annas per day, according to the present rate; whilst labour in Sweden, though moderate, varies from 6*d.* to 1*s.* per day. Allowing, however, that the price of labour should rise in Bajour, and that able-bodied workmen received from to 2 to 4 annas per day, still the rate would be considerably less than the Swedish.

Secondly. The circumstance of mining being commuted for the easy process of collecting and washing the sand, would occasion a great saving of expence; women and children are employed in this operation.†

Thirdly. The forests are described as being of great extent, and close by the localities where the iron sand is collected, and the charcoal used, is made from oak (quercus beloot,) which is the best adapted for that purpose. This will give the manufacture of Bajour a decided superiority over that of Sweden, where the light charcoal of the pine only is used, oak and hard wood being scarce in that country—the charcoal moreover is transported in sledges during the winter, a distance frequently of 30 miles to the furnaces.

I shall here offer a few observations on the subject of the iron in Northern India, for the purpose of showing, that if an improvement be called for there, the argument applies with still greater force to the remoter regions in this quarter.

* The iron is sold in the shape of bricks of different sizes. In making a trial the other day of one of these, which weighed one seer of Cabool, (equal to six seers of Hindoostan,) I obtained out of 16 parts, 10 of iron fit for use.

† The iron sand is brought down annually by the melting of the snow in spring, and in such vast quantity, that for one iron work at any rate, the supply is ample without having recourse to mining

It is commonly imagined in India, that because English iron is brought out as ballast, and landed on the coast for little more than the price it costs in England, that an improvement in the native manufacture would therefore be attended with difficulty. But however much this may apply to the coast, the case is altered when English iron is transported into the interior. It then becomes enhanced in price, and from this cause, as well as the inferior materials of which it is composed, the demand is limited, whilst the native manufacture continues active under all the disadvantages of the most wretched system of smelting, and which, as I have already remarked, is in fact, the most expensive that could be employed.*

All the iron of England, (with the exception of what is produced at Ulverstone in Lancashire,) is made from clay iron stone, which yields about 30 per cent. of metal, and the fuel used being coal, the sulphur combined with the latter deteriorates the iron, and soft or malleable iron cannot be produced equal to the article that is afforded by richer ores, and charcoal smelting. In the Northern Provinces of Hindoostan we have the richest iron-ores, namely, the magnetic, and also the different varieties of the red oxide, such as the specular, red hematite, &c. and these will yield from 50 to 65, or perhaps 70 per cent. of metal, which is all in favour of the saving of fuel and general economy.†

At Ulverstone in Lancashire, iron is manufactured from red hematite ore, yielding sometimes 50, and sometimes 60 per cent. of metal; the fuel is oak charcoal, and a superior iron is produced, which is of great tenacity, and much used for drawing into wire; steel also is made from it for secondary purposes.

During my inspection of these works some years ago, I was closely questioned by one of the iron masters as to the prospects of establishing an iron work in the Himalaya mountains: for example, I was asked about the nature of the ore, and if a sufficient supply of charcoal was to be had, if water as a moving power was abundant, labour cheap, and if water carriage was procurable, &c. &c. To which I replied, that amongst different varieties of rich ore, the red hematite, the same he had at his works, existed also in that quarter; that charcoal was to be had on the spot, for the price only of cutting the wood and preparing it, as the forests were interminable; that labour was about 3*d.* or 4*d.* a day; streams capable of turning any machinery abounded, and water carriage was within a tangible distance of the base of the mountains; that the disadvantages at present, were owing to the want of proper commercial roads from the mines to the plains, which nevertheless might be made by following the course of the principal rivers, as indeed had been done partially in one case, for the sake of pilgrims. I then rallied him about the anxiety he seemed to evince in the matter, and asked him if he was afraid of my running in opposition to him so far off as India, and moreover 1,000 miles in the interior; to which he replied, "Why to tell you the truth, we send out a quantity of iron to India."

Now whether the iron of Ulverstone be used in Calcutta for the manufacture of suspension bridges, I am not at this moment aware; but when I left Kumaon two years

* According to Mr. McCulloch, three-tenths of British iron are used as cast iron, and principally consumed in the United Kingdom, the other seven-tenths are converted into wrought iron.

† Some of these iron mines are situated near the plains, some are higher up, and the copper mines higher up still. The principal iron mine is at Khetsari, in the broad and fertile valley of the Ramgunga.

ago, thirteen of these bridges* had been erected, in a province abounding with iron mines, and inexhaustible forests, and with reference to which, a celebrated mining engineer, in corresponding with me upon the subject, makes the following remark: "It strikes me, that if an iron work is begun in the Himalayas, iron can be afforded to India at a rate lower than the present to a great degree, and at the same time afford a large profit per ton."

In the district of Bajour, an iron work upon the small scale, and similar to the Swedish, might be erected with every reasonable prospect of advantage. When water power can be procured, and a steady supply certain, the saving will be great,† as compared with the application of steam power; a substantial wheel can be erected at a small expence, for working blowing apparatus capable of giving blast to two furnaces; commencing in the first place with one, in order to learn by experiment the suitable charges of iron ore, charcoal, and limestone; and to find that very little iron is mixed with the scoria, which comes off constantly from the iron at the bottom of the furnace.

Should an improvement of this kind take place in the Bajour manufacture, iron of a much better quality, in much greater quantity, and at a reduced expence, might be afforded to the whole of those countries situated between Ghuznee and Lahore; from the excellence of the materials, no foreign iron can ever compete with it, and superior steel may also be obtained from it. No iron manufactured with coal can ever be converted into steel, owing to the presence of sulphur in the coal. It is in consequence of this, that the great mass of steel in England is made from Swedish iron, and the cast steel for the superior cutlery of Sheffield, is from the iron of the mines of Dannemora, the ore of which, (massive magnetic,) differs from all the others in Sweden, on account of its purity; and the iron sells on that account for about double the price of common Swedish iron. The other ores of that country are, I understand, principally magnetic; but more or less contaminated with sulphur, and had they not the advantage of charcoal smelting, the iron they produced would not sell at the high price which is obtained for it.

The prices of crude iron in Cabool in time of Dost Mahomed Khan, and since then, have been the following:—

	In Dost Mahomed's time. Cabool Rupees.	Latterly. Cabool Rupees.
Bajour iron per md..‡	8	12
Foormool ditto ditto,	6	9

* The transport of the last of these bridges, which was put up at Jula Ghaut on the Kali Gogra river, amounted to Rs. 80 per ton. This reminds me of a story that is told in the neighbourhood of Loch Earn, in Perthshire. In a small glen on the Northern side of the lake, a building was erected about a century ago, when there were no good carriage roads in that part of the world, as is the case at present. The lime used on the occasion, was brought on the backs of horses from a considerable distance in Fifeshire, and it was left for the succeeding generation to discover that an excellent bed of limestone existed in the same glen; but this was not all, for the house itself was built of limestone.

† Perhaps the finest example that could be quoted of the effect of water power in saving manual labour, is at Turton near Bolton, where there is an iron wheel at a cotton mill, upon the spider arm construction, overshot, sixty feet in diameter, and ten feet broad in the awes or buckets. From this wheel, the power is taken for moving all the spinning machinery within the mill, which is reckoned equal to 50,000 cotton spindles, or the work of 50,000 people.

‡ The maund of Cabool is equal to 8 seers of Cabool. The seer of Cabool, is equal to 6 seers of Hindoostan.

The iron of Foormool is from the country of the Wuzeereas, in the direction of Kaneegcorrum. It was my intention to have visited this district after surveying Bajour, for though the iron is much inferior to that of Bajour, it is very abundant, and extensively used for implements of husbandry, horse-shoes, cannon balls, &c. The specimens of ore which have been brought to me, and reported to be from that quarter, are clay iron stone, and I believe this to be ore, from the fact of coal existing in that vicinity.

Should a foundry for cast iron be eventually required in Afghanistan, the iron in the Wuzeeree country will be well adapted for the casting of shot, shells, engine-cylinders, pumps, &c.; whilst for bars, rods, fire-arms, &c. the superior iron of Bajour will always be preferred.*

I have mentioned the existence of iron ore in the copper district which has been described. The Moosye iron is not conveniently situated for fuel to render it of immediate importance. A specimen, however, of iron ore has been brought to me from Huryoob in the Jajee country, which borders on that district. The ore is of an iron-grey colour, and gives a red streak, but does not affect the magnet. It is reported to be in great quantity, and the country is described as being covered with jungle. Should the copper mines in the course of time be worked on a great scale, and the consumption of iron proportionate, mines of the latter metal will also be worked there, for the sake of the demand in that neigbbourhood, and of Cabool.

In concluding these imperfect notices on the subject of the copper and iron deposits of this country, I would beg to observe, that in directing attention to the former metal, I do so, not only on account of the demand of it for coinage, and the ready market it meets with from its extensive use for domestic purposes throughout the countries to the west of the Indus, but from the known demand for it to the east of that river likewise.

Should gold or silver mines be discovered in these regions, and there is nothing unlikely in the idea that they may, the probability is, that they will always, as far as intrinsic value is concerned, occupy a very inferior scale of importance to the copper repositories.

If it be a common saying in South America, (the richest country in the world for the precious metals,) that "a copper mine is a fortune, a silver mine scarcely pays itself, but a gold mine is ruin," we may readily conclude, that in this quarter of Asia, where there is such an extensive consumption of the former, the observation is still more likely to become applicable.

But valuable as these repositories of copper may prove, they again need not be expected to equal the results which may be anticipated eventually from working the great stores of iron to be met with in Afghanistan.

By rendering the copper available, however, for which there is such a great market, a fresh demand is provided for the iron, and an improvement in the manufacture

* There is another iron produced in another locality in the Wuzeeree country, from which steel is made. The ore I have not yet seen, but it must be from a different formation to the one which contains the clay iron stone. I shall adverted to this in my supplementary report.

of the latter will not only directly aid the working of all metallic veins which may be found, but become the basis of various superstructures, and when its more general use is inducedby a deduction in price, civilization and improvement will rapidly extend.

It is commonly supposed in this, as in other barbarous countries, that Russia must be rich, since gold mines are reported to be there. But the gold, the platina, and other metallic produce of the Urals, are well known to be far inferior in financial importance to the iron, and if in the Uralian chain, the activity and enterprise of the Muscovite can fabricate annually the large quantity of 7,400,000 pood, (132,000 tons) of iron, what may not British energy and industry effect, when they come to be applied to the vast deposits of iron, and the deep and endless forests of the Indian Caucasus and Himalaya.*

Remarks on other Mineral Productions of Northern Afghanistan.

I proceed now to offer a few observations on the other mineral productions of this country, and I may here mention, that the plan I have been pursuing hitherto, has been to employ the natives themselves to search in all directions, and bring me every kind of mineral which has the appearance of an ore. The exciting a spirit of inquiry in this way, although it has been expensive to myself, is by far the most expeditious method of enabling one to arrive ultimately at a general knowledge of what the country may possess. During the previous year, the political ferment that existed thwarted my success very much ; but now that these troubles have ceased, and the attention of the people is withdrawn from them, the fruits of this plan, if followed up, will become much more apparent. Nothing can exceed the avidity withw hich the Afghans enter upon what to them is so novel a pursuit; and the laborious, and ardent manner in which they traverse the most rugged rocks, and most unfrequented places, when stimulated by an appeal to their interests. It is my rule to pay them well, when I have any thing like proof that they have worked hard, even though they have been unsuccessful ; and, on the other hand, if successful, they are sure of a handsome reward.

Of the valuable mineral coal, there are three directions in which liguite coal is found in the northern districts of Afghanistan.

Coal.

The first formation is along the line of the Indus, the most promising locality of which appears to be near Kaneegoorum in the Wuzeeree territory.

Parallel to this, is a second outcrop of coal in the Ghilzye territory, which I discovered lately at Dobundee, and whilst I have been writing this paper, specimens have been brought me from Hissaruk.

The third formation is in the Huzarah country ; specimens of this have been brought me from the vicinity of Syghan.

* According to a pamphlet published in 1825, by Mr. H. J. Prescott, for the removal of the high duty on foreign iron, it is stated: "The quantity of iron exported from Stockholm in the year 1822 and also in 1824 was 36,000 tons. Sweden in general exports perhaps 100, or 102,000 tons."

All of these deposits of coal are of the lignite species ; the mineral is of a velvet black colour, and approaching to jet or pitch coal. The Kaneegoorum coal burns freely ; and with much flame and smoke ; the Hissaruk is rich-looking, crumbles into angular fragments, and particles of it, as well as that of Dobundee, which I have tried in the flame of a candle, burned well, considering that they were obtained from the surface. What I have as yet discovered at Dobundee is in very thin seams, pulverulent, and resembling coal-dust more than anything else. The Syghan coal ignites with great difficulty, and the flame, which is very slight, has a greenish tinge. Underneath the surface, this character may be expected to alter considerably for the better.

Although this coal is of a subsequent geological date to the mineral we are accustomed to use in England, which belongs to what is technically termed the "independent coal formation," it by no means follows, that profitable beds of it may not be discovered, and in time create a great change in the comfort and commercial prosperity of many parts of this kingdom, where wood is extremely scarce. Coal of this description is extensively used in many parts of Europe, and is frequently of excellent quality.* It is mined in the island of Veglia for the use of the Trieste steamers. Twenty-eight beds of it are wrought about Toulon and Marseilles. At Colognet here is a bed of it 30 feet thick ; the mines of Styria, and of Buda in Hungary, are famous for their immense supplies of this fuel ; great beds of it are worked in Switzerland, in the valleys of the Po, the Danube, and other quarters of the continent.

It will readily be acknowledged, therefore, that although the coal deposits of this country belong to a more recent geological period than that of the independent coal formation, it would be an unphilosophical conclusion to suppose on that account, that they may not exercise the happiest influence on the welfare of its inhabitants. To the Huzareh, the possession of this substance, if found in sufficient quantities, would prove most invaluable. It would enable him to work with every advantage his abundant mines of iron, copper, and lead ; and in a country with so rigorous a climate, and so destitute of fuel, it would be to him the most useful production. Should profitable beds of the mineral be discovered in the direction of Dobundee, there is a level road from it to Cabool, by the plain of Sagur ; and how far the formation may be traced along the Ghilzye tract is yet unknown.

Lastly, the coal of the Wuzeeree territory may turn out of importance, as well for the working of the extensive iron mines in that quarter, as for steam navigation on the Indus.

Gold, &c.

Amidst the numerous samples of ores which have come under my observation, the gold which is brought down by the streams from the mountains above Lughman and Kooner, is all that I have as yet seen, which I can pronounce upon as pertaining to the precious metals. It is stated to be found likewise in streams from the Kohi Baba range, in the country of the Huzarehs, and

* At a single establishment in Wales, there are 13 large blast iron furnaces at work, and it is estimated that their consumption of fuel is 400,000 tons of coal per annum. Works like these convey an idea of the stupendous industry of England.

also in some of the streams of Kohistan ; but I have not yet received specimens from these districts ; the report however, is not at all improbable, and I believe myself it will be found all along the line of greatest elevation of the Hindoo Kosh and Indian Caucasus.

Whether this gold occurs originally in a disseminated state throughout the strata from which it is detached, or whether there exist distinct repositories of the metal, and in connection with some of the beds of iron, which from the iron sand that accompanies the gold must be intersected by the streams, is a subject for future inquiry. To the best of my recollection, all the gold brought to London by the Brazilian Mining Company is found accompanying iron, whether in the alluvial deposits from which it is washed, or the mines where it is worked.

Specimens without number have been brought to me from various parts of the country, supposed by the golden hue of the one, and the silvery whiteness of the other, to belong to the precious metals. In none, however, have I been able to recognise any thing beyond the sulphuret of iron under different forms, and a compound perhaps of sulphur, arsenic, and iron. There are some specimens, however, respecting which I am not quite certain, and these I shall transmit for chemical examination. Having nothing but my blowpipe apparatus to depend upon, when any doubt exists as to the constitutions of a mineral, it is desirable that they should be subjected to the test of analysis. On one occasion I tried a specimen from a deposit in Dobundee, (the ore externally has the appearance of an ore of silver,) and I saw a small bead which appeared not unlike impure silver, but since then I have repeated the trial frequently without coming to any satisfactory result. The fragment of a mineral, however, which is submitted to the action of the blowpipe is so very minute, being no larger than a grain of pepper, that I should not wish these attempts to be considered final. Argentiferous arsenical iron is worked in Germany as an ore of silver, and should that metal be discovered in this country, it will probably be found in combination with some of these ores, or what is still more likely, with some of the numerous veins of lead which are to be met with.

Amongst all the specimens of iron pyrites, which have been brought to me, I have seen nothing that could be termed curiferous. Latterly, I have heard several reports of the existence of silver, but the Afghans are so addicted to the marvellous, and so easily imposed upon by designing alchymists, that I would never attach the smallest credit to them, unless a specimen of the mineral be produced. By all accounts, the Huzareh country must be the richest in minerals of any other in Afghanistan, from the number of old mines said to be there, and the remains of ancient cities in their neighbourhood, which would seem to indicate, that its mineral wealth in former times had been the cause of attraction. Whether silver may exist amongst these mines, is a point to be ascertained.

A story was told me lately by Aga Hoossain, a merchant of Herat, that at Mough in the Eimough or Eimouk country, there is an inscription in the Hebrew character, on a large black slab, to the effect, that in the days of king Jumshed, (1274 years ago,) the following mines were discovered :—

3 of Silver,	1 of Copper,
1 of Lapis Lazuli,	2 of Lead,
3 of Iron,	1 of Sulphur.

I doubt the genuineness of the whole story, but there is I believe no doubt of the fact, that old mines do exist there, and what they are, is yet to be ascertained. My informant says that he saw a number of old grinding stones in a stream close by the mines, which are believed to have been used by the ancients for crushing ore. It is reported also among some of the Huzarehs, that a number of golden vessels were discovered once in some of the old mines of their country, and there is a tradition of gold mines having been worked, but that the vein or veins are now lost. To tales like these I attach no importance, further than as a stimulus to, and a necessity for, investigation. I believe, moreover, from the specimens of iron, lead, copper, sulphur, and coal, which have been brought to me from thence, that the whole of that country is a rich mineral tract, and if the precious metals do exist there, as they are generally found in small quantity, it must be remembered, that their discovery is not likely to take place all at once, but to be the work probably of time and patient inquiry. A speck of gold in a piece of quartz may point to a deposit of that metal; or an accidental circumstance, (such as a Populzye chief related to me the other day,) may lead to the discovery of silver: namely, that many years ago small particles of it had been observed in a stone on which a fire had been lighted.

A specimen of cinnabar, (sulphuret of mercury,) was brought to me once by a villager, who said he had found it in the neighbourhood of Sultanpore near Jelallabad; but as I did not find any traces of it in the rocks in that vicinity, the probability is, it may have been dropped there by accident. Cinnabar is a rich ore of quicksilver, it is a production of Thibet, and if it be ever found in this country, it will more likely be discovered in the direction of the Kohi Baba range than elsewhere. I lately heard also of a very heavy red coloured stone, which is used by the natives in that quarter as a pigment, and sent for a specimen of it, but the individual I commissioned has not yet arrived. A person who was returning from that country the other day with a collection of specimens, was unfortunately robbed of every thing he had. Were the Huzarehs any other people, I should conclude from the description of the mineral that was given, and their manner of using it, that it was cinnabar, but they are such a perfectly rude and ignorant race, that I fear it will be found to be simply the red oxide of iron. Should gold dust be ever collected on the great scale, or veins of the precious metals be discovered and worked in this country, a mine of quicksilver would be of great importance for the necessary amalgamation works; but this is at present a very vague speculation.

Copper. I have mentioned the existence of copper in the Ghilzye and Huzareh territories, specimens also from Bagour have come under my notice.*

Lead. Lead seems to abound in the Huzareh districts, in Ghorabund of Kohistan, and in Wurduk. The lead of the former two is of an excellent quality, the latter is inferior, and of a harsher character. The ore is the sul-

* The price of lead in Cabool in time of Dost Mahomed Khan was Rs. 1½ per Cabool seer, at present its sells for Rs. 3.

phuret of lead, and that which I have seen from the Huzareh country, occurs in the form of the carbonate likewise. Lead is also stated to be found in Bungesh, and a specimen of it from the Sufued Koh has been brought me lately.

Antimony. With regard to antimony, I find that what is sold in the bazar of Cabool as such is a sulphuret of lead. Occasionally, perhaps, a proportion of antimony may be combined with it, forming what is called the sulphuret of lead and antimony.

I could not convince a vender of antimony, upon one occasion, that what he brought me as pure specimen of that mineral, was not so in reality, until I submitted a fragment of it to the action of the blowpipe, and on disengaging the sulphur, showed him what excellent lead was produced. Having at the time a small piece of massive sulphuret of antimony in my possession, and which, to the eye of the antimony dealer presented very much the same external character as his own, I then placed a fragment of it in the flame of the blowpipe, and the antimony immediately melted, and was absorbed by the charcoal, giving off the white fumes peculiar to it, and no trace of lead was observed.

That antimony, however, exists in this country, is beyond a doubt. It is mentioned in the report of the late Dr. Lord on Ghorabund as occurring in that district, and I myself saw in the possession of an officer, a mass of pure antimony, which was found in the neighbourhood of Quetta.

Plumbago. Graphite, or plumbago, is a production of this country. I have a specimen of it, reported to be from the vicinity of Kohi Daumun.

Sulphur, &c. Specimens of sulphur have been brought me from the Huzareh country, and it is reported as occurring there in vast quantity. Saltpetre is produced abundantly from the soil. Rock salt I observed in the hills near Jelalabad by the Soorkhao river, but in too small quantity to be worth working; a sample of it from Altamoor also has been sent me, but I do not suppose it is in sufficient abundance there, to be of any consequence. Marble occurs at Mydan, and probably in many other places, but this and gypsum, and minerals of that sort, it will be time enough to direct attention to, when the country has made sufficient progress in the arts, to render them objects of value for economical purposes.

The most important minerals of Northern Afghanistan, are the following:—

Iron. This mineral is found in many parts of the country, particularly in the Huzareh, the Ghilzye, the Bajour, and the Wuzeeree territories.*

Lead is found in the Huzareh districts, in Wurduk, and in Kohistan.

Copper is found in the Huzareh, the Ghilzye, and Bajour territories.

* In Captain Herbert's report on the minerals of the Himalaya, published in the 18th volume of the Asiatic Researches, he makes the following observation in his account of the lead mines:—"A singular fact is, that the ore and reduced metal sell by weight for the same price at Kalsi, the nearest town. I could not learn the reason of this, but suppose that the produce of sulphur pays the expence of reducing the ore." When I read this, I suspected there might be a portion of the ore, known to be argentiferous; but it is evident that the purest is selected at Kalsi as at Cabool, and sold under the general term of *soorma*, or antimony.

Gold is found in several streams north of the Cabool river.

Coal is found in the Huzareh, the Ghilzye, and the Wuzeeree districts.

Sulphur is found in the Huzareh districts.

Here then are materials for commencing the work of civilization in this rude and barbarous region, giving a stimulus to its commerce, increasing its revenues, and affording employment to its indigent, but hardy and industriously inclined population.

A remark has been made, that "the mountains in this world no doubt abound in mines, but that the people must be enlightened before they can be worked." And in what way might I ask, is this period of enlightenment to be brought about? Are these great mineral repositories intended to lie idle in the meantime, to form merely the subject of a scientific theme, and furnish a few specimens for the cabinets of the curious—or, are they designed by an unerring Hand for the great moral end, not only of administering to the immediate wants of the people, but in their very extraction to be the means of exercising their energies, mental as well as physical, improving their habits, and thereby contributing effectually to raise them from the brutal condition into which they have fallen?*

Let this nation be taught the practical manual arts, so as to enable them to turn the productions of their country to account,—let the hand of the Afghan, under the eye of the European, unlock that wealth which is intended for his use,—then may we expect to see the rays of civilization break in upon the moral and intellectual gloom which pervades this darkened land.

* In a casual conversation I had lately with the intelligent Barukzye chief I have alluded to (Oosmen Khan) he observed :—"If the feeling of the English people towards this country be as you describe it, and its various resources receive that attention which it is out of the power of my own countrymen, from their poverty and ignorance to bestow on them, then not only will Cabool become happy and contented, but surrounding nations, on seeing the prosperity of Cabool, will desire of themselves to come under the protection of the English."

Opening of the Topes at the Caves of Kanari, near Bombay, and the relics found in them. By Dr. James Bird.

The Caves of Kanari, situated on the island of Salsette, and two miles beyond the village of Tulsi, are distant twenty miles from the fort of Bombay, and six from Tannah. The made road from Bombay conducts the visitor as far as the village of Vihar, four miles north of which is the mountain where the caves are excavated. They have been described by several travellers, and are noticed, in A. D. 399, by the Buddhist priest and pilgrim "Ea-Hian," who visited the seats of his religion in India, and whose travels have been translated by M. Remusat. The cavern temple is described by him to consist of five stories, each story containing numerous chambers or cells, cut out of the solid rock, and tenanted by Arhats; a description which answers very closely to the circumstances of the Kanari excavations, which rise from the base to the summit of the mountain in six stories, and are connected to each other by steps cut in the solid rock. The kingdom in which they are situated is said to be distant from Kia-shi or Varanasi, two hundred *yojans* to the south, and is called Ta-thsen Dach-chin.

Immediately in front of the large arched cave, and on a ledge of the mountain, some thirty or forty feet below, there are several small *Thopas*, or monumental receptacles for the bones of a Buddha, or Rahat, built of cut stone at the base. These were once of a pyramidal shape, but are now much dilapidated, and appear like a heap of stones. Several years ago I thought of opening some of them, in expectation of obtaining coins or other relics; but found no favorable opportunity until lately, when several lengthened visits, in company with Doctor Heddle, gave me the desired means of doing so. The success of General Ventura, M. Court, and others, in their search after relics from the *topes* of the Punjab and Kabul, gave me additional hope that I should find something worthy of the labour, and I am glad to report, that these expectations have not been disappointed.

The largest of the topes selected for examination, appeared to have been one time between twelve or sixteen feet in height. It was much di-

lapidated, and was penetrated from above to the base, which was built of cut stone. After digging to the level of the ground and clearing away the materials, the workmen came to a circular stone, hollow in the centre, and covered at the top by a piece of gypsum. This contained two small copper urns, in one of which were some ashes mixed with a ruby, a pearl, small pieces of gold, and a small gold box, containing a piece of cloth; in the other a silver box and some ashes were found. Two copper-plates containing legible inscriptions, in the *Lath*, or Cave character; accompanied the urns, and these, as far as I have yet been able to decypher them, inform us, that the persons buried here were of the Buddhist faith. The smaller of the copper-plates bears an inscription in two lines, the last part of which contains the Buddhist creed inscribed on the base of the Buddha image from Tirhut, and on the stone extracted from the *Tope* of *Sarnath*, near Benares; an excellent commentary on which will be found in Mr. Prinsep's Journal for March and April 1835. The last part of the Kanari inscription, and the copper-plate of which I have now the honor of laying before the members of your Society, corresponds very closely with the text of the inscription from Tirhut. The original in the *Lath* character stands thus:

Yé dhaurmá hetu prabhavá, tésham hétu Tathagatá suvacha Téshánchа yo nirodha évam Vádí Máhá Suwanna:
which transferred to Devanagrí

येधर्महेतुप्रभवास्तेषांहेतुस्तथागतः । सूवाचतेषां निरोध एवं वादी महासूवर्णः ॥

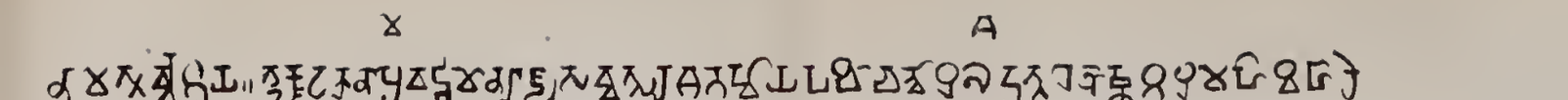
may be translated:—"Whatever meritorious acts proceed from cause, of these the source *Tathágata* (Buddha) has declared; the opposing principle of these the great One of exalted birth, has also demonstrated.'

The only difference between the text of the present inscription and the one from *Tirhut*, is the last word *Suwanna*, the *Pali* for Suvarna instead of *Sramana*; and which means the *golden one*, or *one of an exalted birth or tribe*, and is here evidently an appellative of Bhuddha. In the appendix to Mr. B. H. Hodgson's quotations in proof of his sketch of

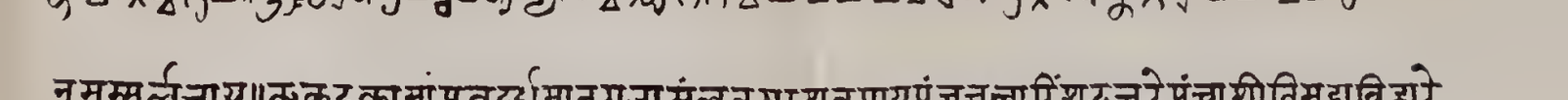
Buddhism, one of the principal attributes of Adi Buddha is सूवर्णवर्णता *Suvarna-warnata.* The above sentence, as Mr. Hodgson remarks, contains the *confessio fedei* of the Buddhaist, and is in the mouth of every one at Kathmandu. The discovery of it at Kanari confirms an opinion long prevalent, that the cave temples of Western India are exclusively *Bauddha*, and seems to strengthen the theory regarding the origin of the *Déhgopes* of Kanari, *Manikyala*, and Afghanistan, that they are *Bauddha* Mausolea, built over the remains of persons of this faith, either of a royal or priestly character. Little doubt can exist of the ashes found in the two copper urns being those of the persons buried, one of whom, according to the larger copper inscription, was the chief of the great *Vihar*, or large arched temple at Kanari. The object of these monuments was, as Mr. Prinsep says, twofold: a memorial of the dead, and in honour of the deity, of which the enshrined saint was only a portion, and as legitimately entitled to be worshipped as the source from which he had emanated, and to which, according to their creed, he could after a life of virtuous penance and abstraction return. The monuments in the *Punjab* and *Cabul* appear to be consecrated tombs of a race of princes, who were of the Buddhaist faith; whose coins are inscribed on one side with Greek letters, and the other with those of Bactrian *Pali*, and whose tribe is called *Khoranon.* They were a Græco-Indo-Scythic race, mentioned by Marco Polo, and called by him *Karaunas*, a tribe of robbers who scoured the country, and plundered every thing within their reach.*

I abstain now from offering any remarks on the general prevalence of the Buddhaist faith on this side of India, or its connexion with the worship of the sun, as my only object is to bring to notice the relics found at Kanari, and their similarity to those discovered in the Punjab.

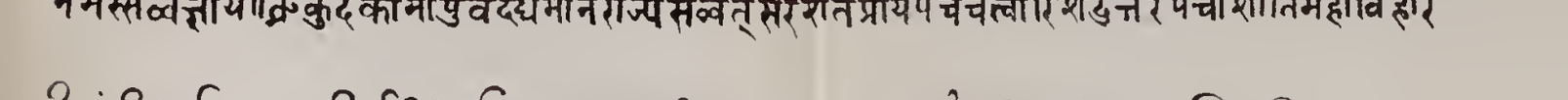
* Travels of Marco Polo by Marsden, page 86.



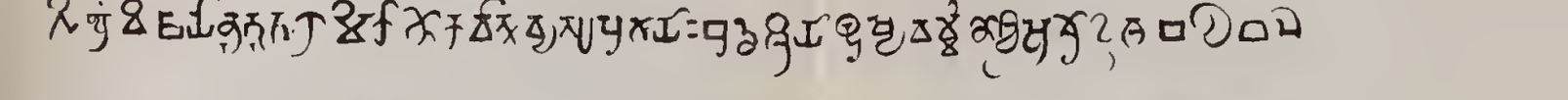
नमस्सर्व्वज्ञाय॥क्रुकुदकालांपुवर्द्धमानराज्यसंव्वत्सरशतप्रायपंचचत्वारिंशदुत्तरेपंचाशीतिमहाविहारे



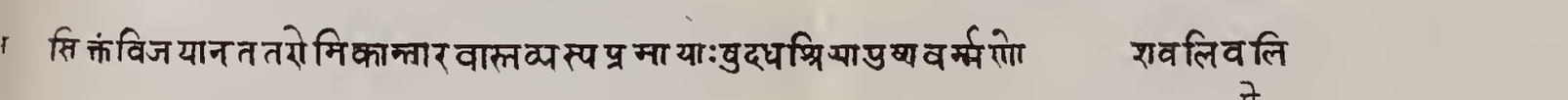
सिंकविजयानततरेनिकान्तारवास्तव्यस्यप्रमायाःबुद्धश्रिमाउषवर्म्मणो शवलिवलि



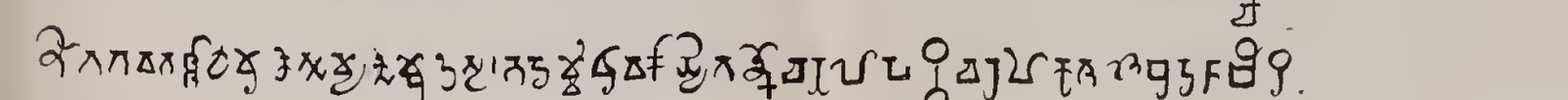
नोभगवतश्शाक्यमुनेःसम्बक्सम्बद्धस्यतद्धर्म्मबुधकार्य्यमज्ञाचरणापाठेचरणाकुशलबुद्धस्विरि



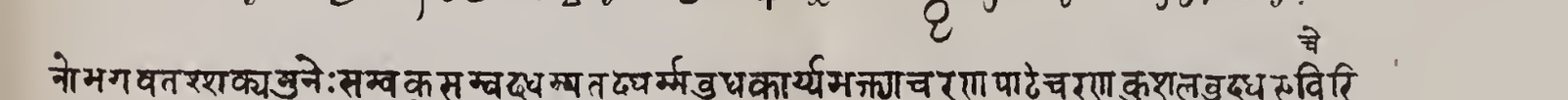
दंतस्यैवचरमजनेरत्यद्भुतकार्य्यस्यशारद्धतीपुत्रस्यचैत्यायतदाषाढ़शुक्लाभिरोच



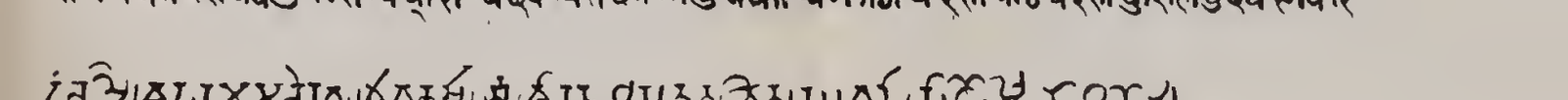
नार्कीर्णावस्थितिसमकालीनप्रतिष्ठापितवास्तव्यस्यदेवायवसिद्धविद्याभरभनमाणितदृश्य



र्णातडदपिकार्य्यवज्रदानिवडकोनादयःस्वतिदिर्यंचपिवयावद्वीचिः स्तपारुप्रचलितमकरा



पूर्णतावर्त्ततोयाक्षीरोदःक्षीरतोयोवृहद्धुस्कलधौताम्रकान्तारमेरुः यावद्यायान्निनद्य



सुविमलसलिलैर्द्धभरतोयवत्यः तावत्कीर्त्तिःस्थिरेयंभजनहितकरीसन्ततंपुण्यनाम्नः

Literal Translation.

Salutation to *Sarvagna*, (a *Jine* or *Boud'dha*, or deified sage peculiar to those sects.)

This was founded in the year of the reign of the *Trukudaka* line about 100 years at *Bardhamanu*,* 54 on the north, and 85 at *Maha Behar*, by *Pushya Burma*, whose habitation was in the northern forest of the conquered *Taromi*, and who, by his personal beauty, was possessed of a *Buddhistical* appearance as a *Chaitya*,† in honor of the most powerful, very wise, and superior *Bhagavana Sakya, Muni*, whose acts were wonderful, and who was the son of *Sárad'dhati*, for the purpose of his studying and practising with firm devotion the famous *Boud'dha* religion, the duty of a learned man.

So long as the revolving waves wherein the *Makara*‡ are swimming at night, the milky water of the *Kshíra Samudra*, (sea of milk,) the *Meru* with its abundant gold and the forest of mangoe—the deep rivers continuing to flow with their clean streams will endure, so long this deed of *Pushya*, which contributes to the advancement of devotion, is durable.

Note.—I have most unwillingly kept back Dr. Bird's paper for many weeks, intending to publish it together with a notice of the late Lt. Pigou's Discoveries at Buhurabad near Jullalabad, on the frontier of Afghanistan. I thought the almost simultaneous examination of a *set of topes* situated close to a *set of caves*, giving similar results nearly at places so distant as Buhurabad and Kanari, worthy of being placed in juxta-position, as of interest to the investigator of Boodhist antiquities. I am extremely sorry that great delay in the preparation of a simple lithograph to accompany the Buhurabad paper should have caused the suppression of this interesting paper for so long a time. Having heard a few days ago from Dr. Bird, with the promise of a translation of the inscription on the two copper plates dug from the *Dehgop* at Kanari, copy of which accompanied his paper, I determined on publishing the reading of one of them (subject to correction by Dr. Bird) as given by Pundit Kamalakanta Vidyalanka, and the literal translation of that reading, which I owe to a native gentleman of much learning and intelligence, Baboo Neelratna Holdar of Calcutta. The inscription is numbered xxviii. (and so copied erroneously into the lithograph,) in a work shortly, I am happy to say, about to appear on the Excavations in Western India, originated by Mr. Wathen, well known as a Sanscrit scholar, and carried on by Dr. Bird.

卐

* This country is also mentioned in the 25th *sloka* of the *Pratápa Rudra* inscription, vide Asiatic Journal, No 82, 1838, page 906.

† Place of religious worship. This, if the word *druma* be added to it, means a sacred tree.

‡ A horned fish, or a fabulous animal.

Note on a Copper Land Grant, by Jaya Chandra.

The copper plate whence the accompanying reading in modern Sanscrit character and translation are taken, was found near Fyzabad in the Oude, and a facsimile of it was forwarded to me by Lieut. Col. Caulfield, then Resident at Lucknow. The land grants of the donor, Raja Jaya Chandra, are not uncommon. In the first volume of the Transactions of the Asiatic Society there is a notice by the late Mr. Colebrooke, (p. 441,) of a grant by this Raja, which is however described at second-hand: "Without having seen the original," says Mr. Colebrooke, "no opinion can be offered as to the probable genuineness of this monument; (date s. 1220, A. D. 1164) the inscription is however consistent with chronology; for Jaya Chandra, who is described in the *Ayeen Acberi* as supreme monarch of India, having the seat of his empire at Canouj, is there mentioned as the ally of Shehabuddin in the war with Prithair Raja, or Pithora, about the year of the *Hejira* 588, or A. D. 1192; twenty-eight years after the date of this grant."

The date of the grant now published is s. 1243, or A. D. 1187, twenty-three years subsequent to that of the same monarch noted by Mr. Colebrooke, and only six years prior to the death of the ill-fated donor, which occurred A. D. 1193. With him expired the dynasty of the Rahtore princes of Canouj.

The genealogy, as given in the grant now before us, differs only in the name of the first ancestor mentioned from that found in Mr. Colebrooke's grant. The name is there *Sripala*, here *Yasovigra*, but the identity of the monarch, known under these different appellations, has been already ascertained, and admitted by the highest authorities, (As. Soc. Jour. vol. iii. p. 339).

The phraseology of this grant is not different from those of Jaya Chandra, which have been already discovered: the anathema against the resumers of land granted in free tenure is remarkable for its peculiar bitterness. The plate, judging from the facsimile, must be in high preservation, and the date it gives is valuable, as bearing corroborative testimony to the accuracy of chronological data.

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स्वस्ति ॥ अकुण्ठोत्कण्ठ वैकुण्ठ कण्ठपीठलुठत्करः । संरम्भः सुरतारम्भे स श्रियः श्रेयसेस्तु वः ॥ आसीद्सीतद्युतिवंशजातच्मा पालमालासु दिवंगतासु । साचाद्दिवस्वानिव भूरिधाम्ना नाम्ना यशोविग्रह इत्युदारः ॥ तत्सुतोभून्महीचंद्रश्चंद्रधामनिभं निजं । ये नापारमकूपारपारे व्यापारितं यशः ॥ तस्याभूत्तनयो नयैकरसिकः क्रान्तद्विषन्मण्डलो विध्वस्तोद्धतवीरयोधतिमिरः श्रीचंद्रदेवो नृपः । येनोदारतरप्रतापशमिताशेषप्रजोपद्रवं । श्रीमत् गाधिपुराधिराज्यमसमंदोर्विक्रमेणार्जितं ॥ तीर्थानि काशिकुशिकोत्सरकोशलेंद्रस्थानीयकानि परिपालयताधिगम्य । हेमात्मतुल्यमनिशं ददताद्विजेभ्यो पानांकिता वसुमतीशतशस्तुलाभिः ॥ तस्यात्मजो

मदनपाल इति क्षितीद्रचूडामणिर्विजयते निजगोत्रचंद्रः। यस्या भिषेककलशोद्वसितैः पयोभिः प्रक्षालितं कलिरजः पटलं धरित्र्याः ॥ यस्यासीद्विजयप्रमाणसमये तुङ्गैर्वलैर्वैश्वसन् माद्यत् कुम्भि पदक्रमासमभरद्रश्यन्महीमंडलेचूडारत्नविभिन्नतालुगलितस्थानासृ गुद्गासितः शेषः स्पर्शशादिव क्षणमसौ क्रोडे निलीनाननः ॥ तस्माद्जायत निजो यतवाङ्वल्लिवन्धावनद्वनवराज्यगजो नरेन्द्रः। सांद्रामृतद्रवमुचां प्रभवो गवां यो गोविंदचंद्र इति चंद्रइवांबु राशेः ॥ नकथमप्यलभंतरणक्षमांक्षितिषु दिक्षु गजानथ वज्रिणः। ककुभिवभ्रमुरभ्रमुवल्लभ प्रति भटा इव यस्य धरागजाः ॥ अजनि विजयचन्द्रोनाम तस्मान्नरेन्द्रः सुरपतिरिवभूभृत्पक्षविच्छेददक्षः। भुवनदलनहेलाहर्म्महम्वीरनारी नयनजलजधाराधौतभूलोकतापः ॥ लोकत्रयाक्रमणकेलिविसृंखलानि प्रख्यातकीर्त्ति कविवर्णित वैभवानि। यस्य त्रिविक्रमपदक्रमभाजयंति प्रद्योतयंतिकलि राज भयं यशांसि ॥ यस्मिंश्चलत्युदधिनेमिमहीजयार्थमाद्यत्करीन्द्र गुरुभारनिपीडितेव। याति प्रजापतिपदं शरणार्थिनी भूस्तद्भर्त्तुरंग निवहोत्थरजच्छलेन॥ तस्माद्द्भुतविक्रमादयजयचन्द्राभिधानः पति भूपानामवतीर्ण एष भुवनोद्वारायनारायणः। द्वैधीभावमपास्य विग्रह रुचिं धिक्कृत्य शान्ताशयाः। सेवन्तेयमुदग्रबंधनभयध्वंशार्थिनः पार्थिवाः॥

गच्छेन्मूर्व्वामतुच्छां न यदि कवलयेत् कूर्म्मपृष्ठाभिघातः प्रत्यावृत्त श्रमार्त्तो नमदखिलफणश्वासवात्यासहस्रं। उद्योगो यस्य धावद्वर णिधरधुनीनिर्झरस्फारधारभ्रस्यद्दानद्विपालीवहनभरगलद्वैर्य्य मुद्रः फणीन्द्रः॥ सोयं समस्तराजचक्र संसेवितचरणः सच परम भट्टारक महाधिराजपरमेश्वरपरममाहेश्वरनिजभुजोपार्जित श्रीकाण्यकुब्जाधिपत्यश्रीचन्द्रदेवपादानुध्यातपरमभट्टारक महा राजाधिराजपरमेश्वरपरममाहेश्वरश्रीमदनपालदेवपादानुध्यात परमभट्टारकमहाराजाधिराज परमेश्वर परममाहेश्वरा श्व पति गजपति नरपति राज त्रयाधिपति विविधविद्याविचार वाचस्पति श्रीगोविन्द चन्द्र देव पादानुध्यात परम भट्टारक महा राजाधिराज परमेश्वर परममाहेश्वराश्वपति गजपति नरपति राजत्रयाधिपति विविधविद्याविचारवाचस्पति श्रीविजयचन्द्र

देवपादानुध्यात परम भट्टारक महाराजाधिराज परमेश्वर पर
ममाहेश्वराश्वपति गजपति नरपति राजत्रयाधिपति विविधवि
द्याविचार वाचस्पति श्रीमज्जयचन्द्र देवो विजयी ॥ अस्तुरेश्च
पत्तनायां केमलीयामनिवासिनो निखिल जनपदानुपगतानपि
राजराजी युवराज मंन्त्रिपुरोहित प्रतीहार सभापति सांग्रामि
काध्यपटनिक भिषङ्नैमित्तिकान्तः पुकि द्भुत करितुरगपत्तना
करस्थान गोकुलाधिकारिपुरुषानाज्ञापयति बोधयत्यादिशति
च विदित मस्तु भवतां। यश्चोपरि लिखितग्रामः सजल स्थल स
लौहलवणाकरः समत्स्यकरः सगर्तेषिर सगिरिगह्वन निधानः
समधूकाम्रवाटिकाविटपतृणापतिगोचरपर्य्यन्तः सोद्दाधश्चतु रा
घाटविशुद्धः श्वसीमापर्य्यन्तः चिचत्वारिंशदधिकद्वादशशत स
म्वत्सरे आषाढे मासि शुक्लपक्षे सप्तम्यान्तिथौ रविदिने अंकतो
ऽपि सम्वत् १२ ४३ आषाढसुदी ७ खौ अद्येह श्रीमद्वाराणास्यां
गंगायां स्नात्वा विधिवन्मचदेवमुनि मनुजयुत पितृगणांस्तर्पयि
त्वा तिमिरपटलपाटलपटुमह समुध्म रोचिष मुपस्थायौषधि
पति सकलशेखरं समभ्यर्च्चर्य चिभुवनचातुर्भगवतो वासुदस्य पूजां
विधाय प्रचुरपायसेन हविषा हविर्भुजं हुत्वा मातापित्रो रात्मन
श्च पुण्ययशोभिवृद्धये॥

अम्भोभिराचम्य कुशलतापूतकरतलोदकश्चर्चकभारद्वाजगोत्राय
भारद्वाजाङ्गीरसबार्हस्पत्येतिचिप्रवराय राजतश्रीअटलपौत्राय
राजतश्रीइन्द्रपुत्राय औडराजतश्रीअनङ्गाय चन्द्रार्कंयावच्चास
नीकृत्य प्रदत्तो मया यथादीयमानकरकरपूरनिकप्रभृतिनियतानि
यतसमस्तआज्ञाविधेयीभूयदास्यन्तीतिभवन्ति चात्रश्लोकाः॥

भूमिं यः प्रतिगृह्णाति यश्च भूमिं प्रयच्छति॥ उभौ तौ पुण्यक
र्म्माणौ नियतं स्वर्गगामिनौ॥ शंखं भद्रासनं च्छत्रं वराश्वा वरवार
णा॥ भूमिदानस्य चिह्नानि फलमेतत् पुरन्दर॥ षष्टिवर्षसहस्रा
णि स्वर्गे वसति भूमिदः॥ आच्छेत्ता चानुमन्ता च तान्येव नरके
वसेत्॥ वज्रभिर्वसुधा भुक्ता राजभिः सगरादिभिः। यस्य यस्य यदा
भूमिस्तस्य तस्य तदा फलम्। स्वदत्तां परदत्तांम्वा यो हरेत वसु
न्धरां। स विष्ठायां क्रिमिर्भूत्वापितृभिः सह मज्जति। तडागानां
सहस्रेण वाजपेयशतेन च। गवां कोटिप्रदानेन भूमिहर्त्ता न मुच्यति।

वारिहीनेष्वरण्येषु शुष्ककोटरवासिनः । क्षुण्णाहयाश्च जायन्ते देवब्रह्मस्वहारिणः । न विषं विषमित्याऽऽहुर्ब्रह्मस्वं विषमुच्यते । विष मेकाकिनं हन्ति ब्रह्मस्वं पुत्रपौत्रिकं ॥ वाताभ्रविभ्रममिदं वसुधा धिपत्यमापातमात्रमधुराविषयोपभोगाः । प्राणास्तृणाग्रजलविंदुसमा नराणां ॥ धर्म्मः सखा परमहोपरलोकयाने । यानीह दत्तानि पुरा नरेन्द्रैर्दानानि धर्म्मार्थयशस्कराणि । निर्माल्यवान्तप्रतिमानितानि को नाम साधुः पुनरादद्दीत ॥

Literal Translation, by Pundit Sarodaha Prasadh.

1. May the embrace of Lakshmi, (* * * * * * * and Vaikuntha,) contribute to your prosperity!

2. The Rajas who were descended from the *lunar* line having departed for heaven, one, named *Yasóvigraha*, by his natural spirits was as the sun himself.

3. His son was *Mahi Chandra*, who extended his fame as beams of the moon across the sea.

4. His son was *Chandra Deva*, who was exceedingly given to justice, who invaded the whole circle of his enemies, and dispelled the darkness of the gallant warriors. He, by the power of his arms, gained the kingdom of *Gádhipoora*, where all sorts of insurrections have been quelled by his power.

5. He, *(Chandra Deva,)* who protected the sacred places of *Kashi*, (Benarus,) *Kushikotsava Kóshalá*, (Oude,) and *Indrasthána*, possessing them, who constantly gave gold equal to the weight of his body to the *Bráhmanas;* made the *Vasumatí*, (earth,) renowned by the hundreds and hundreds of *túlás.**

6. His son *Madanapála*, who was like the moon in his line, and the crest-jewel of all the Rajas, was glorious! By the water of his anointment, all the filth of the *Kaliyúga* has been washed away.

* A religious ceremony, i. e. giving gold or silver to the *Brahmanas*, equal to the weight of the donor's body ; the ceremony is in these days often practised by weighments against grains, or precious merchandise. It is supposed to be efficacious in awarding evil, and was constantly had recourse to by Maharaja Runjeet Sing, (Lahore,) in his last illness.

7. At the time of his expedition for conquests, when the earth was as it were crumbling under the over-passing of his furious elephants, as well as his mighty army, the mouth of *Sesha*,* smeared with blood gushing from the palate pierced by the pressure with his head jewel, was for sometime bent down even to his breast.

8. From him was born *Gobinda Chundra*, like the moon rising from the sea, who by his arms, long and like the creeping plant, kept the newly, acquired kingdom—stubborn as the elephant in confinement; nay, who granted a great many cows yielding sweet milk.

9. His elephants, rivals to that of *Indra*, having sought in vain in the three quarters of the world for elephants, capable of bearing their burdens, came at last in the quarter of *Indra*, (east,) and wandered there-along.†

10. From him was born Raja *Vijaya Chandra*, who like *Surapati*, (Indra,) cut off the *Pukshus* of all the *Bhúbhrit*‡. He at his easy conquest of the world, has extinguished the heat of the earth by the abundant tears of * * * * *

11. His renown challenging the three regions of creation described by eminent poets, and which reached as far as the *Vishnu loka*, (region of *Vishnu*,) has been ever the terror of *Vali Rajá*.§

12. The earth, at the expedition of *Vijaya Chandra* to conquer the whole world crushed by his furious elephants, ascended, as it were, in the dust caused by his numerous army, to solicit refuge from *Prajápatí, (Brahmá.)*

13. From him who was possessed of wondrous power, sprung one named *Jaya Chandra*, the lord of all Rajas, who was as the *Náráyana* himself, born only for the deliverance of the world; and whom the Rajas humbling themselves ceased from contemplating hostilities with, and putting a stop to their designs, submitted to.

14. At the preparation of his warlike affairs, the *Phanindra* (the chief of serpents,) wearied with falling down and again rising from the hard shell of the *Kúrma*,‖ under the pressure of his elephants the ichor from whose temples dropped into the streams, running from the

* The chief of serpents, supporting the earth on his head.

† With the view of finding there the rival elephants of *Indra*.

‡ The word *paksha* means when relating to Indra the "peaks of mountains;" and "allies" when referring to the Raja. The word *Bhubhrit* has also a double meaning, "the mountain" and "the (other) Rajas."

§ *Vali Raja*, v. the *Srimat Bhágavata*.

‖ The tortoise supposed to reside underneath the earth.

shaking hills, and panting from his thousand hoods with impatience, would without sustenance have fainted, and died.

He, the glorious *Jaya Chandra*, whose feet were adored by the circle of Rajas, and who was like *Vachaspata** in discussing on various *Vidyás*, (sciences,) the lord of the three Rajas: viz., *Aswapati*, *Goyapati*, and *Narapati*, very rich, king of kings, learned and superior to all, and who was devoted to the feet of (his father) *Vijaya Chandra*, who also was like *Vachaspati* in discussing, &c. and devoted to (the feet of his father) *Govinda Chandra*, who also was, &c. and devoted to the feet of (his father) *Madanapála*, who also was, &c. and devoted to the feet of (his father) *Chandra Deva*, who was also very learned, king of kings, &c. &c. and who gained the kingdom of Kanyakubja by the power of his arms. That proclaims and orders to all the inhabitants of *Kemali*, the village situated at *Ashúreshapattaná*, to all the rajas, princes, ministers, priests, attendants, chiefs of assemblies, warriors, *(akshapálalikas)* physicians, and servants, who were occasionally to attend to the female apartments, superintendents of elephants, horses, mines, cows, &c.

Be it known to all of you, that this day, the seventh day of the moon, in the month of *Ashádha* of *Samvatsara* 1243, we, for promoting the virtue and fame of our parents and ourselves, having performed ablution in the Ganga at Benares,—satisfied as usual, the *Gods*, *Munis*, men, together with deceased ancestors, with offerings of water, adored him whose fervid beams dispel darkness, worshipped him who wears the crescent on his forehead (*Shiva*), and *Vásudeva* (Vishnú), offered oblations to *Hútáshana* (Fire) with *Páyasha*† and performed *Achamana* with water, then granted with water in hand to *Alonga Ouda Ráyuta*, who belonged to the Bháraddája line, and was possessed of three Provaras, viz. *Bharaddája*, *Angirasa*, and *Várhaspatya*, and who was the son of *Indra Ráyuta*, and grandson of *Atala Ráyuta* with a *Sáshna*, (grant) village above-mentioned (*Kemali*) which was enriched with water and earth, with mines of iron and salts, with ponds full of fishes, with caves and fertile farms, mountains and forests, with gardens of modhu and mango trees, and which extends as far as *Trinayuthi*, and the four boundaries of which were undisputable. It is ever to be enjoyed so long as the sun and moon will endure. Its revenues, as settled, or are to be settled, are duly to be discharged by the tenants.

* The Guru of the Gods.

† Rice boiled with milk and sugar.

Slokas.—He who grants lands, and he who accepts, both of those virtuous reside in heaven.

O, *Purandara*, (Indra.) *Sankha* (shell) houses, ensign of ranks, (chattah) fine horses and elephants, are gained by granting lands.

He who grants lands lives 60,000 years in heaven; but he who confiscates, or resumes, or allows others to do so, is doomed to hell for a like period.

The earth has been enjoyed by many kings, as *Ságara* Raja, and others, and he who rules it in his turn is the sole enjoyer of its fruits.

He who resumes lands granted by himself or others, is to become a dung fly and to live therein with his ancestors.

The resumer of lands can never be free from sins, though he grants a thousand tanks, a crore of cows, and performs a hundred *vajapeya* (a sacrifice.)

Those who resume lands granted by others, will become black serpents in the desert of the forest of the *Vindhya* mountain. No poison is of itself utter poison; but to deprive a Brahman of his property is indeed poison, because the former can kill one alone, but the latter the whole of a man's descendants.

Sovereignty is unstable like the wind; worldly pleasures are in the first instance desirable. The life of man is as a dew-drop on the grape, but, alas! virtue is the only friend who accompanies him into the next world.

But what generous man will resume the grants made by Rajas, who have gone before him, and whose gifts are like wreaths of flowers spreading the fragrance of a good name and of a reputation for wealth and virtue?

Lineage of Jayachandra.

Yashovigraha.
|
Mahichandra.
|
Chandra Deva.
|
Madanapála.
|
Gobindachandra.
|
Vijayachandra.
|
Jayachandra,
the donor.